

# SCRIBBLING, DRAWING, PAINTING



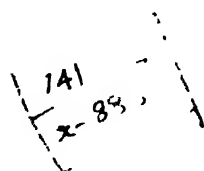
# Scribbling, Drawing, Painting

*The early forms of  
the child's pictorial creativeness*

by  
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*translated by*  
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# CONTENTS

Preface by Sir Herbert Read	<i>page</i> 11
Introductory Remarks	13

## PART ONE

I. Children's Art ?	17
II. Scribble-Scrabble	26
III. Angels Like Hedgehogs	38
IV. With Both Hands	48
V. A Glance at the Inner Workings	57
VI. A Journey Through Space and Time	66
VII. Dot, Dot, Comma, Dash	78
VIII. With Dripping Brush	89
IX. The Child's Road	94
X. What Parents Ought To Do	103

## PART TWO

Nine Parallel Chapters	109
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## ILLUSTRATIONS

### COLOUR PLATES

A. 'Red and Green': a 4-year-old's picture	<i>facing page</i> 56
B. Two-hand painting by a 6-year-old	73
C. 'Hell': by a 7-year-old schoolchild	93
D. 'Heaven': companion picture to 'Hell'	116

### MONOCHROME PLATES

With two hands	<i>frontispiece</i>
'Man': two-hand painting by a 5-year-old	<i>facing page</i> 48
'The Dream of Flying'	49





## PREFACE

**T**his is a wise little book, poised somewhere between the love of children and the psychology of art—but one might say equally well: somewhere between the love of art and the psychology of children. It is a book addressed in the first place to parents—to parents who love their children and would not like to think that their tenderest sensibilities and most creative potentialities are threatened by a process called ‘education’. This book is a plea for humility in the presence of the mystery of ‘becoming’, that process of human development which has its own up-welling powers and indwelling laws, to be encouraged and protected by the parent’s and the teacher’s sympathy and understanding.

An understanding of the child’s symbolic language of form has grown enormously during the past fifty years, and slowly this understanding begins to permeate and modify our methods of education, especially at the primary stage. But there is still much to be done—much to be discovered about the unfolding of the child’s psyche and many old and false concepts of discipline and expression to be broken down. Professor Grözinger’s book, because it is so simple and direct, should appeal to many teachers and parents who have been dismayed by the technical complexities of the subject. It is not that he avoids the more difficult aspects of the subject, but he has a happy gift of summary and illustration. He has his own speciality—the encouragement of bimanual drawing—which is an important contribution to the praxis of education through art. But

## *Preface*

Professor Grözinger does not give this technique undue prominence, but rather uses it to stress the physical wholeness of visual activity. A child's drawing, he maintains, is a total bodily gesture, rather than the specialized skill of separate organs.

The wisdom of this book will be found concentrated in the Ten Commandments (*see* p. 103). These are for parents rather than for teachers, but, long before the child has been consigned to the teacher, parents are in intimate touch with its first creative efforts, and the way they react to the child's first scribbling may be decisive for its whole future development. It is a thought that might increase the anxiety of the average parent, but under Professor Grözinger's persuasive guidance, that anxiety will be transformed into constructive sympathy.

HERBERT READ

## INTRODUCTORY REMARKS

I have written this book because no adult could tell me why angels sometimes look like hedgehogs, why the stork has two big ears, and why it is such fun to paint with both hands at once. It was the children who let me into the secret, and so this book contains a number of new things that nobody knew about before.

Besides that, however, it also contains a certain amount of that love by the aid of which we grown-ups manage to throw a makeshift bridge across into the child's world. It is a sight for the gods to see us swaying across this bridge we call 'psychology', over the abyss of our ignorance. And so this book is intended only for adults; for, lovingly though it has been done, it is still not a sight fit for our children to behold. It is enough if the gods get some fun out of it.

The book has two parts. In the first we shall try to fathom the mysteries of children's scribbling, drawing and painting by the aid of scientific lenses and probes. And then, after we have had our fill of surprises, in the second part we shall try to widen and deepen our discoveries and experiences. And let us all the time bear in mind the words of Nicholas of Cusa: 'Behold how in the play of tender children the order of things is revealed and, in it, God.'



# *Part One*



# I

## CHILDREN'S ART?

Let us begin with a little story. The wife of a well-known Berlin publisher gave her two little boys complete liberty to paint to their heart's desire and herself hung the most daring of their productions on the nursery walls. Being at that time—it was in the 'twenties—herself passionately devoted to modern art, she hoped that by and by she would see the children find their way, through play, to an understanding of the works of the Expressionists and Cubists. But coming into the playroom one day—the boys now being thirteen and fourteen—she was taken aback at seeing that all the children's own works had been removed from the walls and replaced by reproductions of works by Durer, Leibl, and Holbein. 'We couldn't stand that tripe any longer,' the boys told their mother firmly, thus destroying her hopes of a smooth transition into modernism.

We shall deal with the moral of this story later. For the present it may serve merely to illustrate the fact that even the best-intentioned parents often do not know what children are getting at in their drawing and painting. On the other hand, psychologists are well aware that a lack of interest and understanding can cause irreparable damage to the child's psyche. And so, just as parents go to the trouble of learning about the proper nutrition and clothing of their children, they ought also to know something about children's drawing, in order to avoid interfering in a disturbing way and so that they may give the child a chance of developing its own imaginative energies. It is particularly important to give the child this chance in

## *Children's Art?*

the early stage of its development, before it goes to school; for it is in this phase of mental development that the foundations are laid.

It is hard to make good later for mistakes made in this period.

What it comes to is that the grown-ups are the main problem where children's painting is concerned. It is primarily on them that everything depends—on their good sense and their love. Nowadays, as it happens, many of them have learnt to be tolerant of the things that children produce with brush and crayon. They know that children see, feel, and represent things in a way different from that of adults, and so, instead of interfering with what the children do, they quietly let them have their own way. But there is still a large group of people who are worried by such 'scribbles and doodles', because they themselves cannot make anything of it. They see the child as a little adult; they correct and admonish, instruct and demonstrate; they can hardly wait for the child to express and occupy itself in the manner that to *them* seems right and proper.

Such intolerant persons constitute a strange contrast with yet another group—those who form an ecstatically applauding audience in nurseries and classrooms and at exhibitions. For these people 'children's art' is a revelation, and they speak or write about it in a rapturous, gushing manner, which naturally provokes the correctionists into making sarcastic remarks. So the child wanders between these conflicting parties, now discouraged as a bungler, now glorified as a genius, and finally takes its refuge with those who benevolently leave it to its own devices and do not confuse it by either exaggerated praise or unsympathetic rebuke.

It may as well be made clear at once that in this book we shall not make common cause with any of these three groups. Frankly, the enthusiasts' transports of delight are sometimes enough to destroy all one's pleasure in children's drawing and painting. True, there is no marvel more enchanting than the child at its drawing, oblivious of everything but the picture-world it is creating. But the world is



## *Children's Art?*

full of marvels, and we choose rather to take sides with those who speak in a tone of deliberate sobriety and coolness of things that do not need any gilding of their gold.

In the group of the intolerant, the correctionists, we behold the belated adherents of an attitude towards the child that was predominant in earlier days. In epochs with a definite 'will to style' the peculiar world of the child was ruthlessly overlaid and the stamp of the prevailing taste was impressed upon the child's psyche without scruple. The epochs of the Gothic, the Renaissance, the Baroque, and Classicism were all intolerant because they had a well-defined taste and an ideal of beauty towards which they endeavoured to lead the child as early as possible. The lack of any such characteristic style in our age—that is to say, the plastic vagueness prevailing in the adult world nowadays—is the reason for the anything but natural fact that in our own time the child is given the chance to evolve its own pictorial world, in a state of perfect liberty that would have been unthinkable in any age with a style that we now recognize as historically distinct.

But this possibility of freedom is threatened not only by those who even to-day wish to guide the child towards an obsolete ideal of beauty, style, or what is 'right' in art. More dangerous, because they come seemingly as helpers and liberators, are certain champions of 'children's art' who, caring little for the child's psychological development, misuse its pictorial creations for the purpose of dubious aesthetic wild-cat schemes. Such people are, as the art critic John A. Thwaites once observed, frequently those who dodge the risk of making a judgment on modern adult art by retreating into the non-committal realm of the child and its play.

Closer to the correctionists, heavy-laden as they are with tradition, are those enthusiasts who have sold themselves lock, stock and barrel to some artistic movement or other and now seek allies in the children. Such an attitude generally leads to yet another form of intolerance; for now the only thing that is acknowledged as

## *Children's Art?*

genuine 'children's art' is whatever seems to fit in with the particular movement, and all the rest is rejected as unchildlike and 'influenced'. It is possible to observe that in the moment when such tendencies infiltrate into the educational system the child is prematurely confined to some such definite direction and so gets stuck on the particular level of development whose products are most pleasing to the teacher. And so in contrast with the old days, when the child's individual development used to be shortened or by-passed, what is to be feared nowadays is artificial delays, when the teacher gives free rein to his own adult taste for folk art or for this or that movement in modern painting, instead of letting the child live through all the phases of its natural development.

That is why the question that adults should ask when confronted with children's art is not: 'What do we like? What do we find beautiful?' but: 'What phenomena can be observed in the normal child? What is useful and what is damaging to its development? What is the aim of this development?' The answer to the last question is decisive. It is this: the aim of the child's apparently artistic development is not art, but reality. At each stage in its drawing and painting, except at the scribbling stage, the child is a realist and thinks it is portraying the world perfectly—a world, admittedly, in which at first the figures of its imagination also signify 'reality' to the child. The child is quite unaware that at the beginning it is making a statement much more about itself than about things. Yet the more the gap between the inner image and the outer world—the gap so characteristic of the early stages of development—closes up (in other words, the more the child becomes capable of apprehending objective reality), the more do the typical peculiarities of children's art fade out, and so, as a rule, does the child's pleasure in painting and drawing. The process has its parallels in the realm of reading. Here too we can observe how one day the child lays aside the fairy-tale books and reaches out for works that will give it some knowledge of the objective world: ~~travel~~ stories, history, or

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## *Children's Art?*

books on natural science. There are romantic souls who see this 'adolescent crisis', when the child's drawing or painting frequently becomes rather like technical drawings or plans, or becomes influenced by adult art, as a retrograde step, because they have started out from the false premise that what they are confronted with is the development of an artist. The psychologist, on the other hand, sees this as a natural stage in development towards maturity: in other words, as progress. The artistically gifted child, the child who at this stage experiences a permanent increase in its creative power, is an exception. What is normal and typical is the behaviour of the two boys mentioned at the beginning of the chapter, who one day could not endure the sight of their childish pictures any longer—because these were inadequate apprehensions of reality—and replaced them on the wall by reproductions of masters unsurpassed in their portrayal of visible reality.

Now, if children's art is a developmental phenomenon, are we to let things take their course and leave children to themselves, as the benevolent do, trusting that they will somehow find their way safely? This trust in Nature would be justified if we were dealing with an instinctive mechanism that worked automatically and which could not be affected by any interference from outside. But this is not the case at all. The child is, after all, not born with a crayon in its hand, as a bird is born with a beak; on the contrary, all its painting and drawing material is put at its disposal by the civilized world in which it grows up. Hence its creative urge is always dependent on opportunities, which must be offered it. And here much damage is done by the narrow-minded sort of upbringing that is always saying 'no'—'It's a fool that scrawls on table and walls!'—and still more by false economy on the part of the parents, who think such 'scrawling' a waste of paint and paper.

And so it is only at the beginning, at the scribbling stage, that we can speak of a certain instinct being released by the sight of, for example, an adult writing; further development depends on a

## *Children's Art?*

favourable environment, on the understanding attitude of parents and teachers. Only a few children follow the line of their natural development unerringly. The majority are easily diverted and unsettled by the example of other children, by painting-books and picture-books, and by toys: factors that steer the child's natural tendencies on to wrong tracks, or develop them prematurely, or cause them to wither. Another factor that must be borne in mind is that the modern child generally grows up in a highly technical and mechanized environment, and is often the only 'handicraftsman' among machine-tenders. It lives in a milieu that offers it no chance to use its inner formative powers, which in earlier times were continually stimulated and nourished by domestic interior decoration, the organic forms of furniture, tools and utensils, and the products of folk art, which were akin to its own products. This is the deeper reason why to-day we attach such great importance to children's art. What used to meet the child half-way, as a correspondence to its own inner life, the child has, in this age of puritanically chaste functional forms, to produce and evolve out of itself. Mechanization, which banished the decorative element necessarily associated with handicrafts—and which inevitably had to do so, in keeping with its rational structure—deprived people of those elementary patterns of order (the word 'ornament' comes, after all, from *ordinamentum*: order) which had hitherto helped them, from the primitive stage down to the Rococo and Classicism, unconsciously to prefigure the phenomenal world and assimilate it into their own being. The close relationship between the basic patterns in the child's pictorial activity and the four orders of basic ornament—the series, the alternation, the cross, and the strewn-pattern—suggest *a priori* that the disappearance of ornament could not fail to have its effect on the development of visual perception in civilized man. And indeed children's art was discovered at the very moment—about 1905—when the last ornamental movement in the history of art, that tragically mistaken movement, Art Nouveau, collapsed. The fact

## *Children's Art?*

that soon afterwards an entirely new art arose—'abstract' art—which was audacious enough to make use of elementary formal patterns in the pictures it painted, shows that this disappearance made itself noticeable among adults too.

With these remarks we have reached the limit we set ourselves when uttering a warning against bringing the problems of adult art into the nursery. This does not mean we want to overlook the mysterious relations between children's art and the taste of the time. The fact that we enjoy children's art, the fact that it can give us an aesthetic experience, is undoubtedly connected with the conquests achieved by modern art, which has opened our eyes to the beauty of what is fresh and original. But it has also opened up to us a realm of the beautiful in Nature that was previously closed to us—the world of the infinitely small, the forms of crystals, micro-organisms, and mathematical curves as symbols of natural laws. Children's art, as a natural developmental phenomenon, also has its place in this realm of the beautiful in Nature, even if the border-line between it and art cannot be drawn as clearly as between, say, an abstract painting and a micro-photograph of an organic or inorganic substance. But for the sake of both the child and of intellectual clarity we should be on our guard against confusing the feelings that children's paintings inspire in us with the experiences afforded by works of art. The child does not know much, but it *is* a great deal, because it lives closer to creation than the adult, who knows a great deal but *is* less. So children's art means both more and less than adult art: more, because it pertains to Nature and is therefore a self-contained realm; less, because the child does not produce freely, but is impelled by its own development, which is also biological, and which grants it no aesthetic freedom. This too is why the child has no real certainty of taste; taste can be formed only when the organism has reached maturity, when the human being has reached full stature. The child likes whatever is appropriate to its own level, or just slightly ahead of that level. It is only when it knows reality as

## *Children's Art?*

such and has come to understand and enjoy deviating from reality as an act of freedom, in other words, when it is no longer a child, that it is getting closer to art. Hence no direct education in art is possible before adolescence.

Why then (many will ask) all these exertions, all these endeavours on the part of parents and teachers? Why, if the crisis of adolescence only sweeps it all away and the same child that at the age of ten was painting with such vigour and originality by the time it is fourteen has either ceased to produce anything or turns out average, conventional pictures? One might answer with a simile. We look after the child's milk-teeth, even though they are only temporary, because they are the pre-condition for a healthy set of permanent teeth. So too one might call children's art the milk-teeth of vision. That is really the point. The child's pictorial activity is not yet art, but it is preparatory exercise for the artistic organ, the sense of space, volume, and colour. The adult's taste can be formed only on the basis of a physio-psychic development, and not by means of a later intellectual occupation with works of art. Taste must be, so to speak, in the bones before it becomes conscious. This physio-psychological basis for the formation of taste later on is what we are creating by letting the child scribble, draw, and paint. If movement, touch, and vision are able to find early mental expression in line, planes, and colour, then the foundations have been laid on which the adult can go on building. It is only in this way that we can get at the root of the problem of trash, which we are to-day fighting only in isolated instances. Taste, as the word itself tells us, is, after all, something that must be 'on the tip of the tongue'. It must function before we have time to think; it must spit out what does not agree with us before we swallow it. As yet we know nothing of the power of such taste, but we are helping to prepare for its development in our children.

So then the beautiful and moving thing about children's drawing and painting is not the beauty of art, but a pointer to something

## *Children's Art?*

healthy, sound, and strong, something delicate, deep-seated, and vital, in the child. It is connected with the child's mental and physical development into a sound, whole person who will be a match for life. It is the beauty of human nature, of Nature in man. But if we want to know what this nature is, we must take the child seriously. The scientist stands at his telescope, gazing into the infinite spaces of the universe; or he stands at his microscope, contemplating the mutations of a fly. Beside him stands his child, scrawling something on the wall. The scientist does not dream that here too are undiscovered worlds, just as there are in the spiral nebula that he is just watching come into being. It does not occur to him to accord the child that dignity which he does not deny to the fly—the dignity of mystery. He disapproves of the child's scribbles.

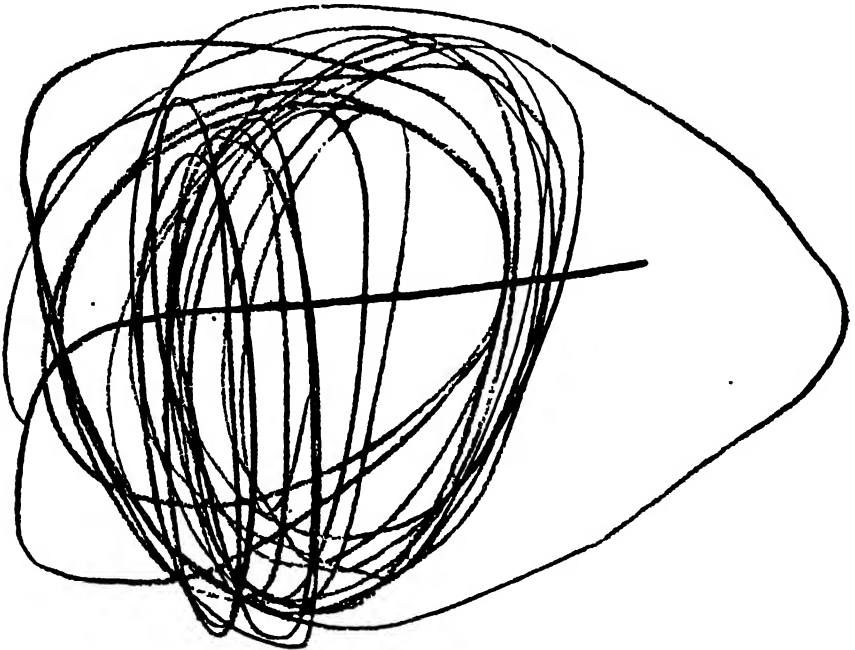


FIGURE I  
Primal skein. Second year

## II

### SCRIBBLE-SCRABBLE

So much for the first chapter, the sad one in which we had to consider grown-ups and the problems that they, in their sombre manner, project and introduce into the child's world. Now we can look forward to more enjoyable experiences. For our subject is a cheerful one—the happiness of childhood, the happiness of the inexhaustible moment. And yet on the threshold of this world we hesitate, asking ourselves: Can we adults simply walk into the child's world like this? Is the door really open for us? Or do we need some password, some 'Open Sesame', in order to get inside?

At this question many a mother will smile, for she thinks she knows the magic word that opens the door. But, mistrustful as we are, we ask a further question: Does love really teach us to understand the child? The mother, of course, will go on smiling, for she knows quite well what, for instance, the words 'wei Bukkenbumm' mean, whereas all the philologists in the world would never discover that in Neni language they mean 'two balloons'; and here it must be pointed out that Neni is not the name of an African tribe, but what two-year-old Verena calls herself. Nevertheless, the example taken from the child's private language does not cut any ice with us, for the mother is, after all, the child's first teacher in matters of language and everything else. She knows what the child means because she was there when the child translated into its own language some adult word that had been carefully said to it or which it had happened to pick up.



## *Scribble-Scrabble*

But does the mother also know what the child 'means' when one day, round about the end of its second year or the beginning of its third, it begins to scribble, covering a piece of paper with tangled curlicues or zigzag lines? Of course the mother knows. 'Baby is writing,' she says proudly, and the child may perhaps say the same, and of course *it* ought to know. So it all seems to be quite clear. The grown-ups write, the child sees them doing it and plays at imitating them; and naturally enough, since it cannot write yet, all that comes out is scribble-scrabble and pot-hooks. But some day the child will learn to write properly, instead of scribbling. So where is the problem?

It is a tempting explanation, so tempting that even to-day many educationists make do with it. In reality, however, the words 'Baby is writing' are the prelude to a little tragi-comedy in which the tragic element is the adult's delusion that he or she understands the child, and the comic element is the child's readiness to enter into this 'understanding' game, which is at the same time a game of hide-and-seek. The fact is that when the child sees an adult writing, there is only one thing that interests it in this activity, the meaning of which—giving-language permanence by means of signs on paper—it does not understand at all. The one thing that interests the child is the possibility of expressing, or rather, impressing, movement and rhythm on the paper by means of a tool, whereby something comes into existence that was not there before and which opens up all sorts of possibilities. The rhythmic experience is what the child seeks and enjoys in scribbling and what it increasingly makes its own.

So the little child's scribbling is, to use a technical term, a motor experience. Now, it would be easy to decipher the hieroglyphs of the scribble-picture if the child's sense of space, of body, and of movement were the same as the adult's. But this is by no means so. The fact is that the primal pattern of scribbling is *not* those well-known zigzags which pretend to be grown-up writing and which be-

## *Scribble-Scrabble*

long to a slightly later stage of development, but circular movements, spirals, skeins and tangles, from which we infer that the small child has a *rotatory* sense of space and that its hand is, as it were, impelled by a dynamo.

It is to be hoped that this rough-and-ready technical comparison is not too startling. It is intended solely to prepare us for the fact that the scribble-drawing comes to our senses like a signal tapped out, emanating from a realm that in the adult has long been silted



FIGURE 2  
Primal cross. Second year

## *Scribble-Scrabble*

up. We can only hope to progress further if we are willing to renounce any prospect of immediate understanding, and frankly recognize how utterly different the child is: in other words, what we need is unselfish affection and respect for what goes on in the child. To us, for instance, it is a matter of course and goes without saying that we are land-animals and not amphibia. But for a being that only two years ago was still in the mother's womb, lapped in the watery element as the fish is in the sea, life on dry land is not yet by any means such a matter of course. This water-dweller that has been left high and dry since its birth already has epoch-making experiences behind it: the terror of being unprotected, the shock of being in a blaze of light, contact with the soft and the hard, the warm and the cold, and the gnawing extremity of hunger. But it also has its triumphs behind it: grabbing and holding fast, throwing away and picking up, crawling, the first attempt at pulling itself up, standing on its own feet, and walking—victory over the force of gravity. Still, after each adventure after each victory as after each defeat, this being has withdrawn again into its own world as into a lair, loaded with the booty of experience. 'In the first phase of his development the human being is still living mainly inside himself, as a self-contained, sensitive sphere on the periphery of which the stimuli of the outer world impinge'—that is the way the psychologist puts it.

The child is thrown back into this world of infancy and early beginnings when it expresses its sense of space for the first time on paper. It is now liberating itself from something it experienced endless ages ago—by adult reckoning, two years ago—and it is doing so by means of an intellectual act of which it is capable because it *is* a human being. It is getting things out, presenting them, representing them, and in this way carrying on an active dialogue with its inner life and its body, which still remembers those things. Scribbings are letters that children write to themselves; they are auto-communications by means of which the child 'comes to itself'. This marks a beginning that dates back a long time before the phase

### *Scribble-Scrabble*

of talking; the phase the child has reached by the time it first takes a pencil or crayon into its hand. Scribbling is babbling, is non-objective, wordless—the rhythm of life itself.



FIGURE 3  
Spiral with centre of gravity. Third year

So we continually see very small children, with their 'rotatory' sense of space, making circular and spiral movements, until the paper is covered with a tangle of lines like undergrowth (Fig. 1). Many children, indeed, use both hands, *stirring* on the paper as though in a bowl of dough. Alongside this early pattern we also find—chronologically often an earlier, but in its significance, as we shall see, a secondary pattern—a constant repetition of up-and-down movements, both perpendicular and horizontal, which may produce something like a cross (Fig. 2). Just as in the development of language the regular, monotonous babbling gradually divides up into groups of sounds, which are established as a result of the

### *Scribble-Scrabble*

child's imitating itself, e.g. *mum mum mum, da da*, so too we see the endless circling gradually evolving into separate patterns that become self-contained. After several circular movements the pattern is closed, and thus finally becomes detached as a created object (Fig. 3). Or verticals and horizontals appear, made with a few strokes (Colour Plate A). We can observe the same thing too in the zigzag line that soon follows, which is at first not interrupted, the first line moving from left to right, the next from right to left, without any spacing between, so that the little vertical zigzag is followed by a big horizontal zigzag. Later, then, a zigzag line is brought to its conclusion by a horizontal line covering the same distance over or under it (Fig. 4). Or a perpendicular or horizontal line already drawn is gone over with a zigzag.

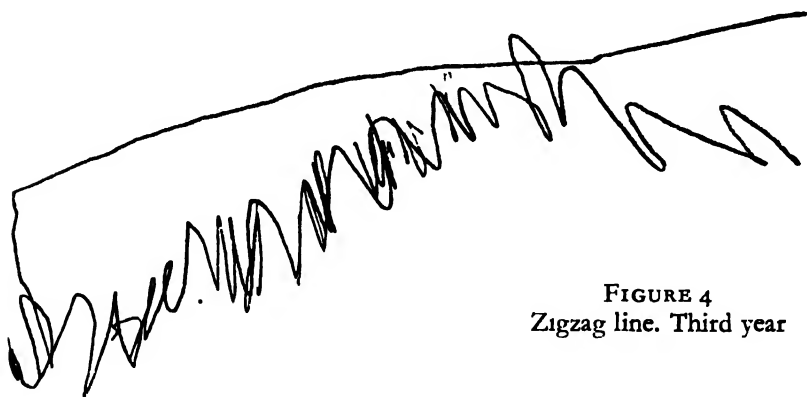


FIGURE 4  
Zigzag line. Third year

And now the word has slipped out that tells us exactly what this 'writing' is about: it is a *going*, a kind of walking. In its scribbling the child is walking over the paper as the flies walk over the wall. So in the spiral, the cross, and the zigzag we have in pictorial form three of the child's fundamental experiences: floating, in which the child revolves on its own axis like a little star—the *rotatory sense of space*; standing, in which it experiences the perpendicular and horizontal

## Scribble-Scrabble



FIGURE 5  
Box spiral. Third year

positions and thus also the process of becoming erect—the *primal cross*; walking, in which it overcomes the force of gravity—the *zigzag*. These three primal patterns are soon joined by what is called the box pattern. The child's sense of space here establishes itself as it did previously in overcoming gravity, in its struggle with the floor and the legs of tables and chairs. First the box evolves from the spiral (Fig. 5). This box spiral is the union of the rotatory sense of space with the sense of solid ground, as it were a crawling in a circle. It is comparatively seldom that we encounter walking in a circle, the zigzag spiral (Fig. 6). A free box pattern is often found first in chalking on the pavement, when the hand as it were draws together with the foot and is thus reinforced in its sense of being firmly on firm ground (Fig. 7). When asked, the two-and-a-half-year-old referred to the resulting triangles and rectangles as 'house'.

## *Scribble-Scrabble*

At this word many adults will give a sigh of relief and say to themselves that here at last is a word, a description, a meaning. For



FIGURE 6  
Zigzag spiral. Third year

what is so worrying to many parents about scribbling is that here is something visible that does not originate in the visible world, but in the body's inarticulate memories, in elementary bodily feelings that the adult long ago lost. Seeing, after all, does not suffice when one is confronted with patterns that float, grope, walk, and stand, patterns in which the whole of the child is expressed, and not only its intellect. 'It is the calamity of education,' that great educationist Herbart wrote 150 years ago, 'that so many a faint light that glows in tender youth has long become utterly extinguished in adults; and that is why they are not capable of fanning it into a flame in anyone else.' This difficulty still exists to-day, in spite of all the progress that has been made in psychology, for we like what is compre-

### *Scribble-Scrabble*

hensible and close to us, and not what is strange. We search tirelessly for truth; only where the child is concerned we wish to exert an influence before we have found what the truth is. Prejudiced by our affection, driven by our anxiety, we want to bridge the gap between ourselves and the child, instead of confining ourselves to protectively watching over it as we let it go on its own way, not too slowly and not too fast.

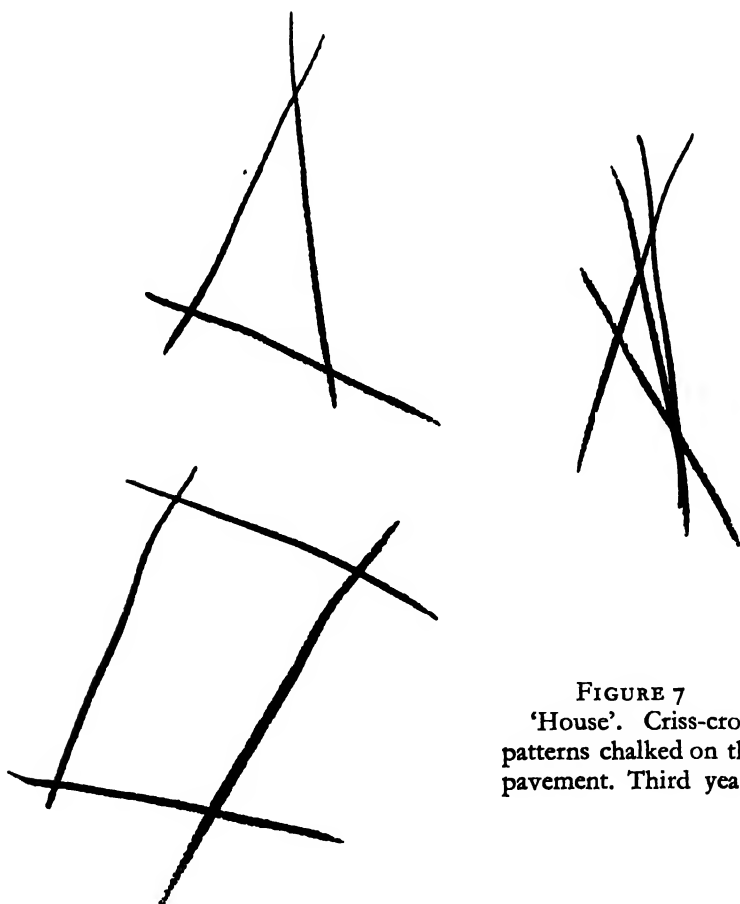


FIGURE 7  
'House'. Criss-cross  
patterns chalked on the  
pavement. Third year



## *Scribble-Scrabble*

The first great disturbance that we cause in the child's pictorial world comes with the question, as obvious as it is disastrous, that we put to the child when it brings its picture to us: 'What is it?' This is a question like a lasso, with which we try to catch the child and pull it over to our side. Is it the cunning of love? Is it force of habit? Whatever it may be, the child obliges us and produces some explanation or other. Giving names is a good game, and in an instant a circle has become Daddy, the moon, a potato, or a balloon, whatever happens to occur to the child. But by doing this we have brought about something that is laden with heavy consequences: we have established a connection between the primal realm of scribbling and the already far advanced realm of language, and the only effect this can have is to speed up and shorten the child's pictorial development, so that it does not come to organic maturity. For language always names things and thus objectifies forms that have not yet detached themselves from the child. Objectivity will enter into the drawing one day of its own accord, but it is only the child that knows the right moment, not the adult. Even years later the child will remember the names it has itself found for its pictures; those extorted by questioning change from moment to moment.

But this is not the only damaging effect of the premature 'What is it?' question. For this seemingly quite harmless intervention also causes a momentous shift in the mysterious interplay of the senses involved in pictorial creation. In the phase of its development before the child begins to talk, the phase that is objectified in pictures in the scribbling phase, the suckling is followed by the 'grip-ling', and only after that by the 'talk-ling'. This means that the eye has first to work together with the hand, with the sense of touch, in exploring the world. Only when the hands have reported back, like scouts, as to how far away things are, how light they are, how solid, how heavy, only when space has been crawled through, walked through and felt through, does the eye know something of the world. Then the hands and feet can rest, then the eye can ally itself to the

### *Scribble-Scrabble*

ear and name things. If in drawing, which repeats this development on a new, intellectual level, the 'haptic' phase, the phase of touch, is skipped or not allowed its full range, then the child's pictorial activity will lack a very essential element, the sense of the plastic and tectonic in the physical world.

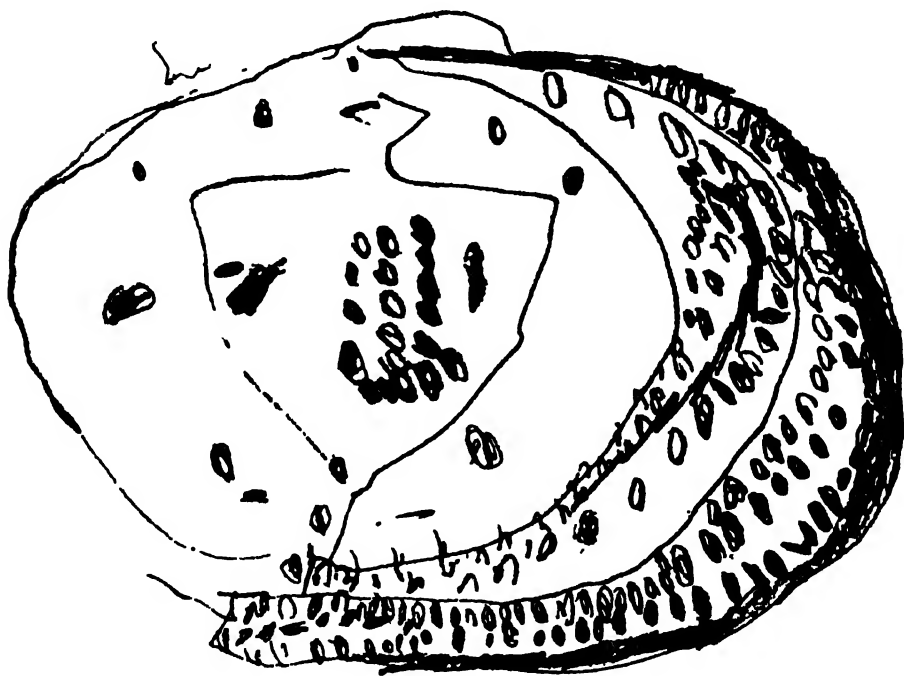


FIGURE 8

Rows of beads in spiral, arising out of pulse-beat. End of third year. 21 by 30 cm.

But let us return to the primal patterns of the child's vision of the world. In the zigzag we already encounter a pattern that we can also regard as an ornament, as a series, a repetition of similar elements. This one-thing-after-the-other—for a zigzag is in space the same as tick-tock in time—has its own charm for the child. Soon the

### *Scribble-Scrabble*

child begins to fill in, say, a spiral with rows of circlets that seem to betoken the pulse-beat, the rhythm of the blood (Fig. 8). Besides the pulse, breathing also begins to make itself noticeable as a stimulus to the formation of new patterns. A series of curves lays one spatial shell on the other like the annual rings of a tree (Fig. 9). So in the first phase of its activity, in its coming to terms with the world, the child has discovered the three orders that are the elements not only of basic ornament, but also of primal pictorial form-making: series, alternation, and intersection. The fourth order, strewing, also appears as soon as a child surrounds, say, a primal spiral with dots—a pattern that reminds us of photographs of celestial bodies in outer space (*see front end-papers*). Here we see the elements of all form, not arising from the simple element, but developed from the totality and in it determined from the beginning. Only now is the child absorbing the world into itself, assimilating it to its sense of space and of its own body.

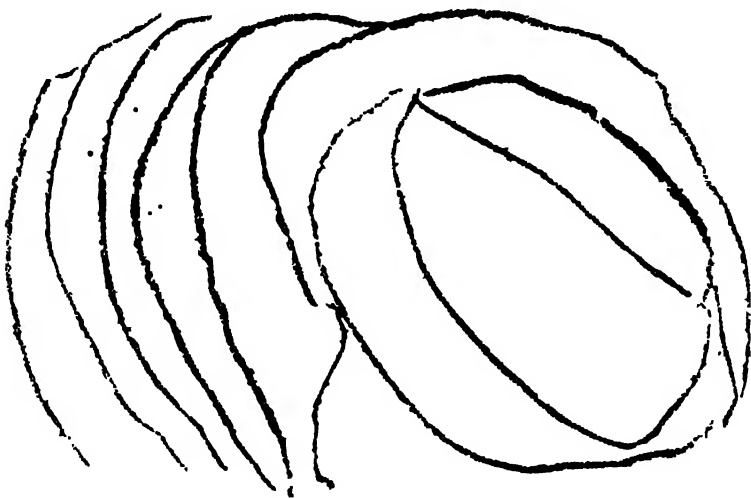


FIGURE 9

Spatial drawing inspired by breathing. Black crayon. Beginning of fourth year. 21 by 30 cm.

### III

## ANGELS LIKE HEDGEHOGS

Once the scribble is there on paper it is part of the child's world of play and subject to the laws of that world. The child does not know in the least how it has arrived at all these shapes that have come into existence under its hand, and the adult is even further from knowing. And so the adult asks the child, and the child gives an answer. One cannot help thinking of Montaigne, who once said: 'I never know do I play with my cat, or does my cat play with me?' Formerly as much importance was attached to the child's first statement that some scribble represented a human being as was attached to its first use of the word 'I'. In reality, such a statement on the child's part is primarily a sort of play. Just as a little wooden brick can be anything under the sun, a house, or a train, or a piece of cheese, so too a circle, or series of circles, that has been drawn can represent very different things: a balloon, or a flower, or eggs, or sweets, just as it suits the child's playful imagination at any given moment. Interpretation of a shape as a human being can, however, only be recognized as genuine if we know the context in which the shape so interpreted has originated. A child just under the age of three draws, for instance, zigzag lines from left to right and back again. Suddenly it comes to a halt—and let us remember that this zigzag scribbling is a walk that the child takes on the paper!—and draws a spiral circle beside the zigzag line and, out of it, two vertical lines downwards, then a horizontal line through the verticals, and finally a horizontal line right and left of the circle. Then it looks at

### *Angels Like Hedgehogs*

its work complacently and says: 'Legs. Hands' (Fig. 10). Of the head it says nothing. To the adult the shape that has arisen is a cephalopod. This is of course not correct. The spiral is the whole child, its own inner space, the 'sensitive sphere' that feels itself con-



FIGURE 10

Zigzag with first representation of a human being. Age 2 years and 10 months. Roll-ball pen

nected with the world by its hands and feet. What the child interprets as extremities are this sphere's lines of direction or lines of touch. What is very illuminating is the horizontal line through the 'legs': this is the solid ground on which the child stands. All this shows the cephalopod to be the synthesis of spiral and intersection (vertical and horizontal lines) that we have come to know as the two first manifestations of the sense of space and body. This is undoubtedly progress, which indeed very rapidly leads to the child's interpreting the circle as a head and providing it with eyes, and later also with strokes indicating nose and mouth, the result of which is the real cephalopod (Fig. 11). Sometimes we also find on one and

## *Angels Like Hedgehogs*

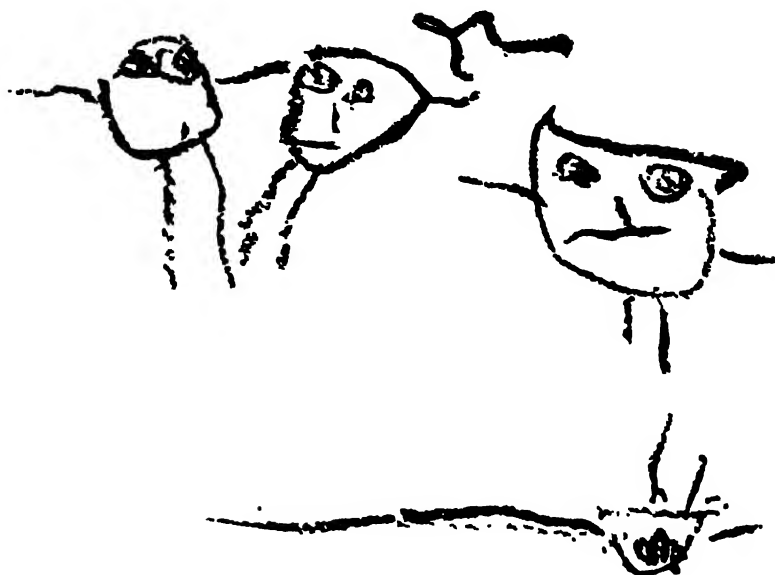


FIGURE 11  
Cephalopods. Red and brown crayon. 3 years 4 months

the same sheet of paper a cephalopod evolved first out of a circle, and then out of a box (Fig. 12). There is already a 'rider', too (Fig. 13).

Alongside these there may arise random shapes that strike the adult as being consciously objective drawings, such as for instance the drawing 'Mouse eating grapes' (Fig. 14). Here, however, it was only the addition of the eye that suddenly turned a playful configuration into a seemingly intentional representation. Frequently, too, the interpretations change while the drawing is being done. What at first was a balloon, becomes by having boxes built into it a house (Fig. 16). Compare this with the box spiral showing the two phases merging with each other in rotatory movement (Fig. 5). Here we see clearly how the child is moving on towards organization of parts and towards objectification. Inside and outside are coming to meet

*Angels Like Hedgehogs*

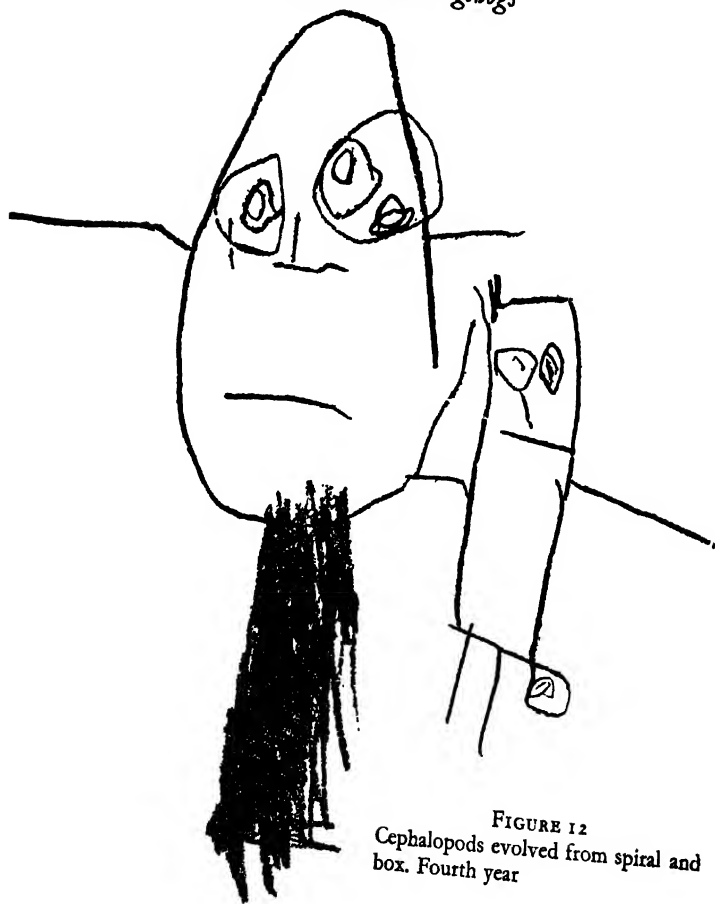


FIGURE 12  
Cephalopods evolved from spiral and  
box. Fourth year

each other; what first came about unrelatedly, as an inner form, now finds its correspondence in reality. The drawing reproduced in Fig. 17 might well be called 'on the way towards a Cock'—playing with box-like patterns suddenly brings about the recognition of them as a 'cock', and that then is what the picture is called. Usually

## *Angels Like Hedgehogs*

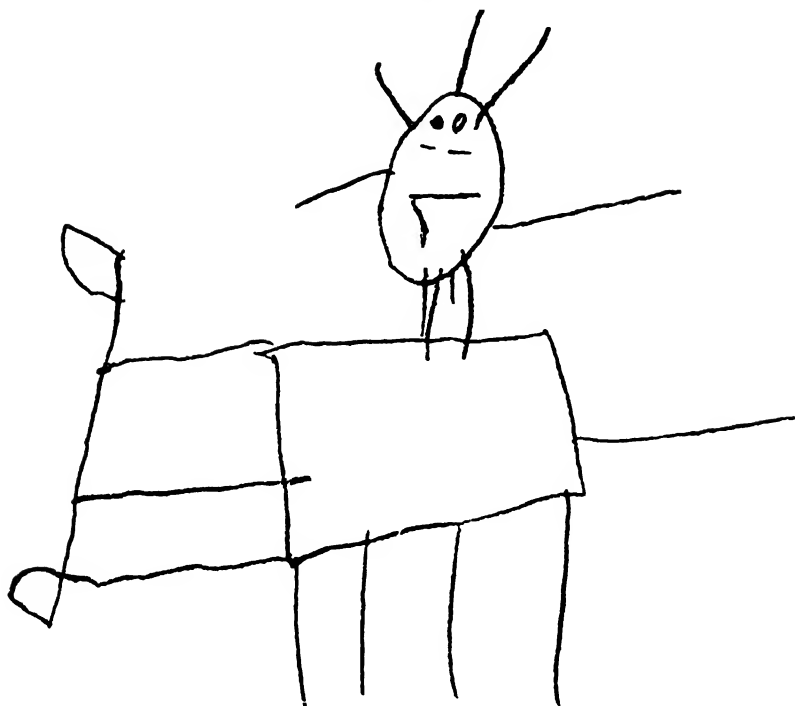


FIGURE 13  
'Rider'. Pencil. Age 3½

the interpretation, as in the case of the mouse, is linked with a final addition of an element by which it becomes recognizable. Here it is the beak and foot (line of direction) that have objectified the drawing, which began by being non-objective. A picture intended right from the start to represent some definite object is, however, still rare at this stage. It is usually only in the course of the pictorial adventure that the child discovers what the picture is 'going to be'.

Proper feet come into existence when a line of direction or touch bumps into something hard and solid, and is then bent at a right-angle, and this in the direction of walking. It is necessary always to bear in mind that wherever circular lines appear—rings, spirals, and



## *Angels Like Hedgehogs*

so forth—what we have is primarily the child's 'inner space', the sensitive sphere, but wherever straight lines join up, what we have is movements of direction; and that all acute or right-angles indicate the blocking of this movement in a certain direction by some obstacle or by the ground. Anyone who is not acquainted with this ABC of children's art will be unable to distinguish between very different patterns, say an angel, a hedgehog, or a calf.

A three-year-old girl strews over a sheet of paper what look to the adult like suns—or are they hedgehogs, or flowers? Well, the child itself says they are angels. What could be more logical? Angels float through the air, flying wherever they like, and that is why they have lines of direction on all sides. Here it at once becomes clear that the rotatory sense of space may be preserved even after contact with the solid ground has been established: flying means overcoming the force of gravity! (*See back end-papers.*) But what does the next drawing mean (Fig. 15)? Obviously there is a rotatory running on something solid, for the lines of touch or direction bump into something and continue moving along on something, for which reason they have assumed the shape of feet. The child explains: 'It's a calf jumping'. Fundamentally, however, it is nothing more or less than a symbolized somersault. Finally, an oblong shape (Fig. 18) is described as 'the Devil'; it does not float, as the angel does, but it is obviously able to crawl or dart in all directions. Undoubtedly what has happened here is that when the picture was finished there was added to it the association with some uncanny insect, say a centipede. The child may continue making these shapes for a long time. It also sometimes happens that in a later phase some experience causes the child to regress and return to these shapes. For instance, a five-year-old, after having already drawn aeroplanes corresponding to the real thing, suddenly, to everyone's astonishment, again draws an aeroplane according to some inner notion (Fig. 15). The pattern is reminiscent of the angel, but, as the child explains, 'it's all full of little windows'—what has produced the picture is the notion

*Angels Like Hedgehogs*



FIGURE 14

'Mouse eating grapes'. Scribble afterwards interpreted and completed accordingly. Age 3

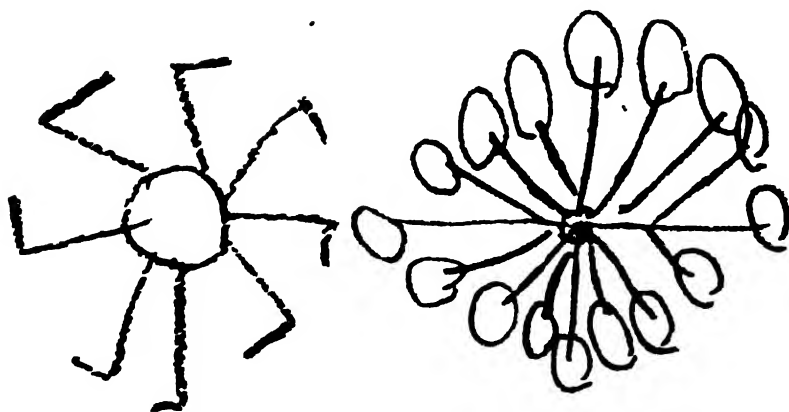


FIGURE 15

Rotatory sense of space. 'Calf jumping' and 'aeroplane'. Age 3 and age 5

*Angels Like Hedgehogs*



FIGURE 16

'House'. Delimiting ring paced out as ground-plan. While painting the child named one room after the other. Water-colour. The blotch, bottom right, indicates the shutting of the door. Age  $3\frac{1}{2}$

of being able to look out of the aeroplane, combined with a rotatory sense of space. The idea of flying by the aid of wings is initially alien to the child and can come into its imaginary world only from outside, for example by way of the angels in fairy-tales or picture-books.

We are on the threshold of a new phase, in which the child for the first time draws something it has had stored up in its imagination from the beginning. This happened of its own accord. The more the child has drawn rings and added lines of direction, the faster the associations have followed—legs, hands, head, Daddy—until one day the result becomes the point of departure; that is to say, the

*Angels Like Hedgehogs*

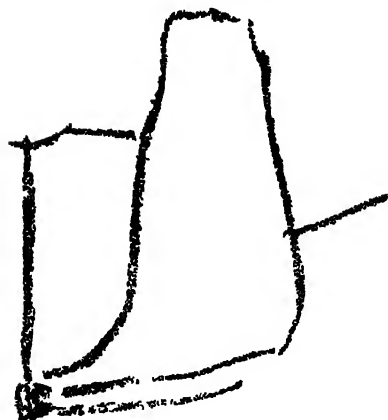
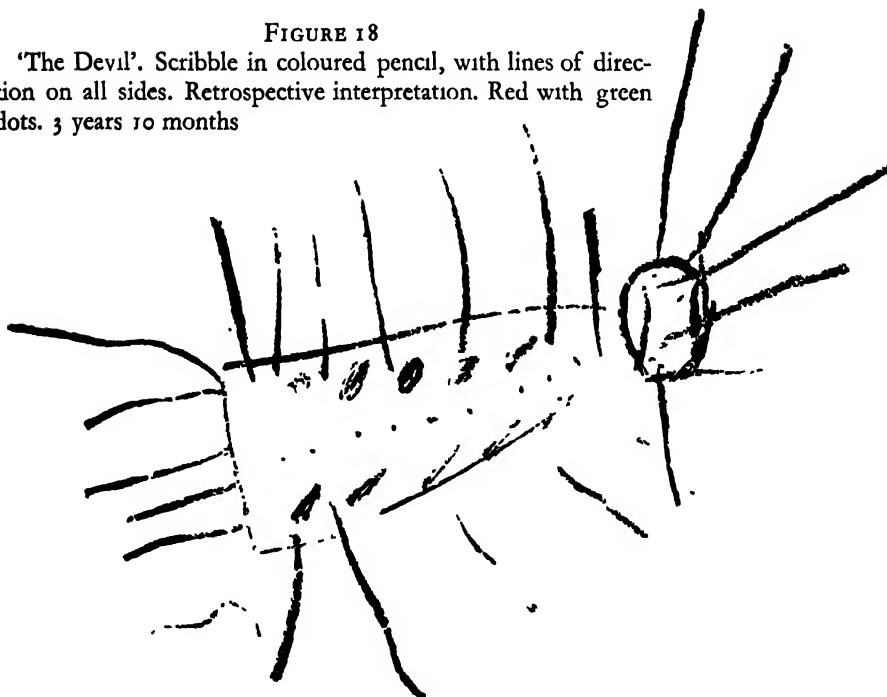


FIGURE 17  
'Cock'. Interpreted scribble in black crayon. Age 3

FIGURE 18  
'The Devil'. Scribble in coloured pencil, with lines of direction on all sides. Retrospective interpretation. Red with green dots. 3 years 10 months



### *Angels Like Hedgehogs*

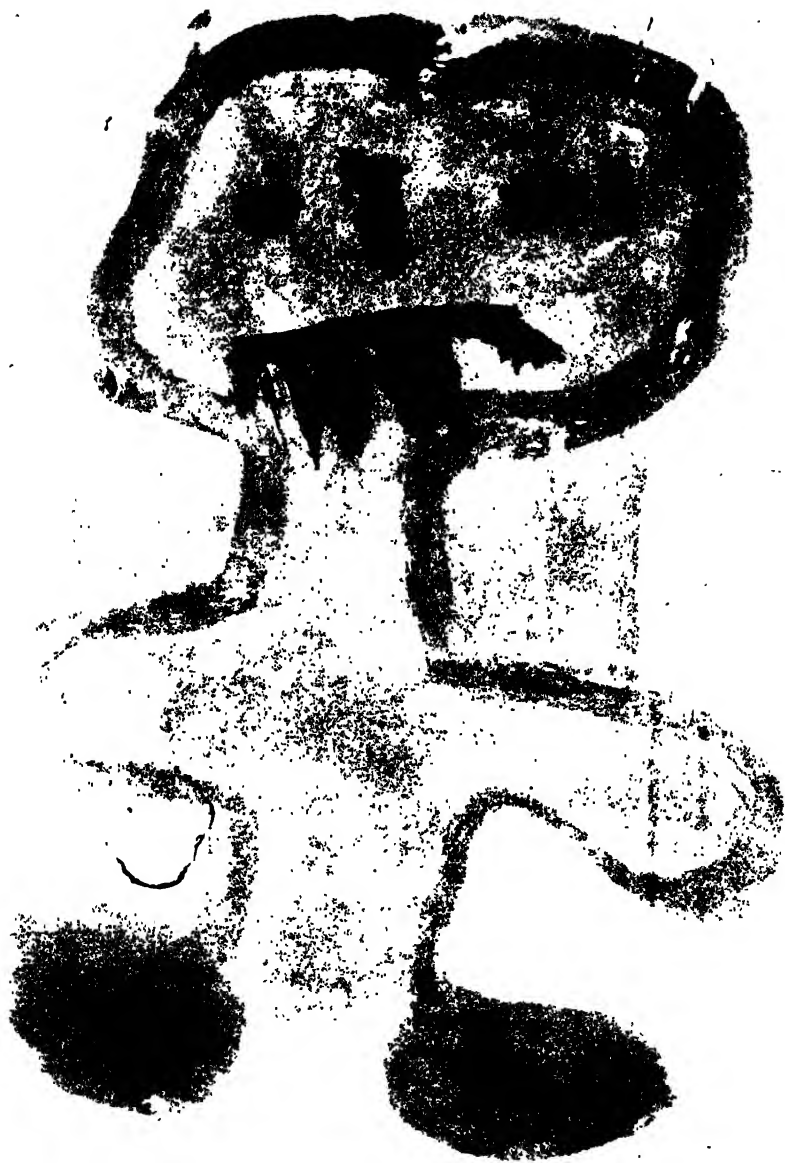
movement is reversed, and the child has the intention of drawing Daddy, and does so. In the same way, too, the box very rapidly becomes a house. In this way the two objective motifs are gained that constitute the beginnings of pictorial subject-matter, the human being and his dwelling, the small, sheltering world. And so parents swiftly and proudly enter this recognizable and identifiable world together with their children, without the slightest notion of what treasures they are leaving behind, all unmined, in the child's soul. These hidden treasures are the subject of the following chapter.

## IV

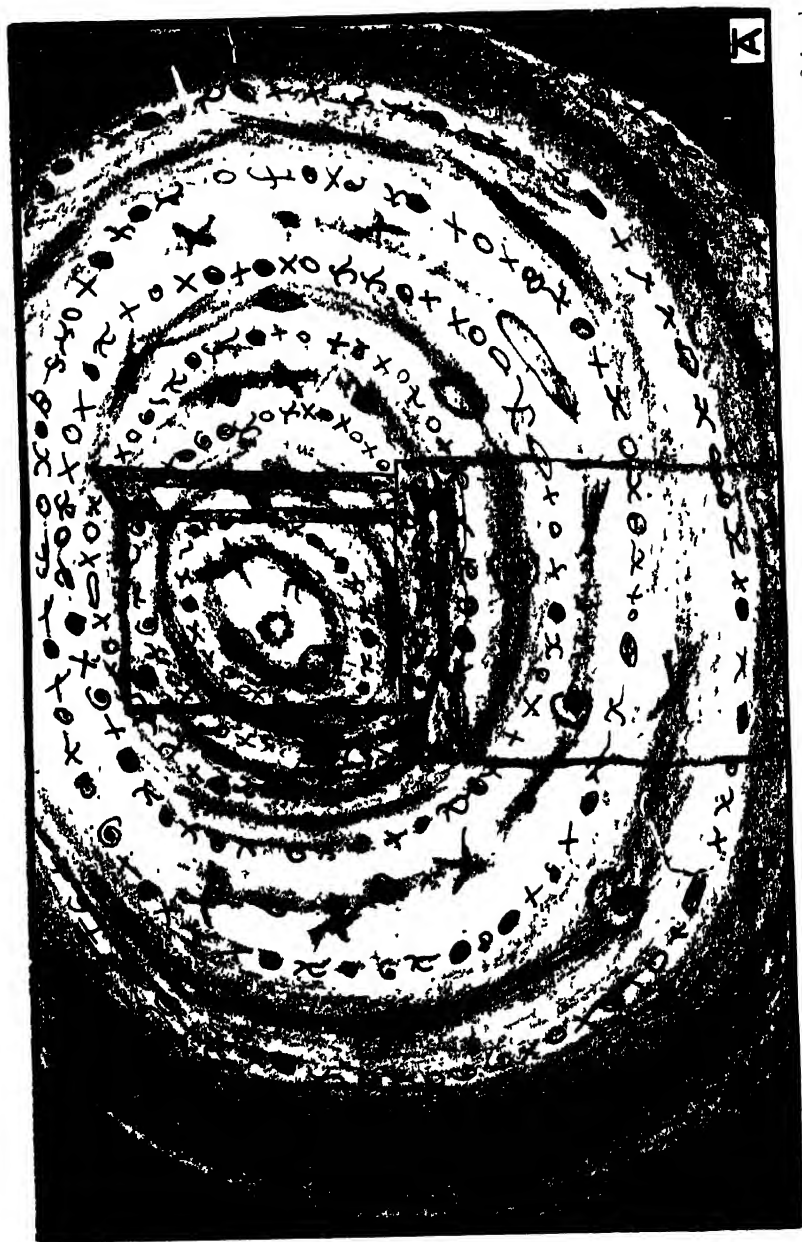
### WITH BOTH HANDS

A three-year-old child is looking at a picture-book. Suddenly it exclaims: 'Oh, the stork hasn't got any ears!' and it takes a pencil in its right hand and gives the stork an ear on one side of its head, then changes the pencil over into the left hand and draws the other ear. The point of the story is, of course, not the stork's ear but the child's hand. Why does it draw each ear with the corresponding hand? Here is a parallel example: when a Melanesian drew a human figure in the sketch-book of the British ethnologist Haddon, Haddon saw to his amazement that the native drew the right side of the figure with his right hand, the left side with his left. The reason for this peculiarity is to be sought in the fact that in children and primitives the experience of touch is sometimes so closely associated with the hand which touches that in drawing each hand makes its own statement and cannot be replaced by the other, and this regardless of whether the draughtsman is right- or left-handed. Haptic drawing, seeing with the hands, sometimes occurs spontaneously in children, and in the case of the stork picture it was probably stimulated by the memory of the child's own ears being touched by parents or brothers and sisters.

The small child is *ambidextrous*; that is, in its first years its sense of space and body is developed by the equal use of both hands. A child gets more pleasure out of eating if it can have a piece of bread or an apple in each hand and can take bites from them alternately. When shaking hands, children sometimes hold out the left, sometimes the



"Man". Two-hand painting by a 5-year-old. Unconscious self-portrait, afterwards completed by painting in of the face and then interpreted. Red, yellow and green.



“The Dream of Flying.”: Clayton Drawing by a 12 year old boy, completed with pen. Fiedlissing Elementary School.  
The child explained “Everything went spinning round, see, with them little things in it.”



## *With Both Hands*

right hand, and they are especially fond of holding out the left if they are urged to give the right, the 'proper' hand. The child still feels itself to be entirely two-handed, a *bi-lateral* being. After all, it is not so long ago that the scribbling hand, together with its companion, was helping in the process of crawling about—two hands and two feet were used. And both hands still distinctly remember what it felt like when they closed round things for the first time. How much does the eye know in comparison? One only knows properly what one knows from having touched and felt it. That is more or less the way the child's physical memory works. But the grown-up keeps on interfering. 'Must you keep on touching things? Don't. Mustn't touch! No, not that hand, the other one! Won't you ever learn to do it properly?' And this goes on from morn till night.

Naturally, the adult is in the right, and not only because right is right. It is the mystery of the hands that they are like man and wife and soon divide their tasks between them, the right doing the more strenuous, the left the more delicate work; the right, associated with the speech-centre in the left half of the brain, is the more conscious, the thinking hand, whereas the left is the feeling hand. (This is reversed in those who are born left-handed.) However, this fundamental specialization is something that many parents try to bring about too early, and the influence of the school—learning to write!—can have such an unfavourable effect on the left hand that it becomes stupid and clumsy, subjected to the right hand's will to dominate. The hands then live in what one might call an unhappy marriage. It has been only with the development of modern technology that the left hand has been set free in some fields. Many machines have to be tended with both hands; but it is above all writing, which so long as it is *handwriting* is the monopoly of the right hand, that through the introduction of the typewriter has become a two-handed activity.

Keeping the child back from haptic experiences, and this together with a premature favouring of the 'proper' hand, may all too

## *With Both Hands*

easily cause the child's feeling for the plastic and the static, for what is called form in the narrower sense, to wither away. The child's sense of body becomes superficial, a mere feeling for planes; it loses a dimension, for the sense of touch then ceases to have any share in vision, which is left entirely to the eye. Motor activity thus becomes one-sided and, as it were, hops into space on one leg instead of vigorously striding through it. To the uninitiated this may sound fantastic; it has actually been brought to light again only recently by a new science, which deals with the properties of the left and the right side of the body. But as late as the eighteenth century these things were still known, and indeed until 1850 the old custom of changing the hand still prevailed among many handicraftsmen—one day filing, planing, and painting would be done with the left hand, and the next with the right.

In the teaching of art the American, Tadd, as early as the 1880s went back to bimanual training and encouraged children to draw bilateral patterns on the blackboard with two pieces of chalk: Greek ornaments, but also leaves and other realistic motifs. In 1900 Tadd's method was introduced into England, where Jackson's book *Ambidexterity* was published in 1905, and then into Germany too, where *Beidhandkultur* was much discussed for a time in the train of the Art Nouveau movement, which had a taste for bilateral forms. Then interest faded out again. It is only recently that two-handed drawing has again been introduced in some schools, in order to stimulate the children's motor activity and sense of rhythm.

Bimanual drawing is, however, of particular importance in the early stage of visual development, for it is an excellent means of safeguarding the function of the scribbling phase—which is to develop the child's elementary sense of space and body—from a premature invasion by conscious conceptions of objective reality. By giving the child a chance to do what it often does instinctively from the start, namely to draw and paint with two crayons or pieces of chalk or brushes, we counteract any tendency to produce a

### *With Both Hands*

premature and hence forced drawing of 'people' and 'houses', which is the result of the adult's untimely 'What is it?'. But above all we are liberating the body's most beautiful and most spiritual function and allowing it to take on pictorial form: I speak of *breathing*.

Before their fifth year, even when given the chance, children only occasionally draw and paint with both hands. The necessary specialization of the hands, and perhaps also the rapid development of speech, in these early years causes the desire for bimanual pictorial activity to recede. The inevitable influence of adults may also have an inhibitive effect. Here (Fig. 19) is an early example of a purely haptic covering of a surface with the brush. The child, not yet three years old, is feeling over the surface and filling it by contrapuntal action of both hands together. There is a very striking independence of the hands at this stage. It is quite different with the four- or five-year-old child. At this latter stage even when children draw with one hand there is a marked preference for bilateral patterns, wrongly termed symmetrical. The child has passed out of the first phase of

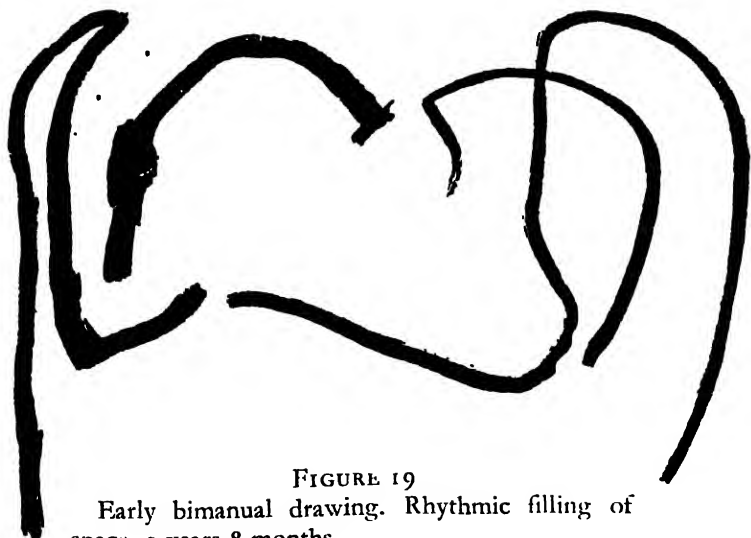


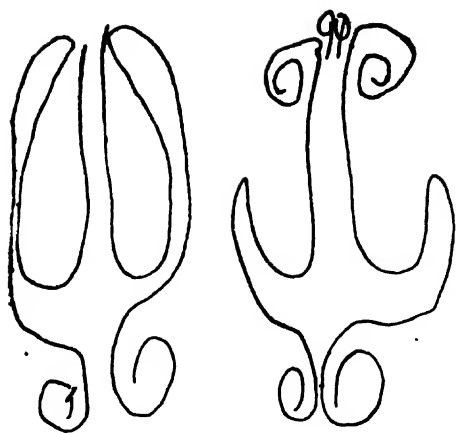
FIGURE 19

Early bimanual drawing. Rhythmic filling of space. 2 years 8 months

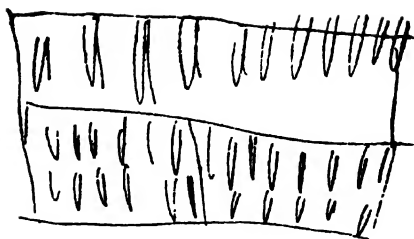
## *With Both Hands*

rebellious self-assertion, now feels itself to be a person, speaks of itself as 'I', and so in its drawing too asserts itself as a space-creating, independent being. It eagerly seizes the chance to 'feel itself' that two-handed drawing offers. The motor stimulation that it gets from the way its whole body enters into the act of drawing on the blackboard, or painting on a large surface, is astonishing, and heightens its imaginative feeling for form to an extraordinary degree. This also increases productivity, and with five-year-old children may bring about a thoroughgoing intoxication of creativeness, producing from ten to twelve pictures within half an hour. Children then draw and paint what are called 'sequences', series of individual pictures that are records of the series of images that run through the formal imagination like a film. The effect that such activity has on children is remarkable. Those who draw with two hands at once have a stronger sense of space than others, and this is apparent even when they work with only one hand. Furthermore, this fullness of visual activity, with the whole body entering into it, has beneficial results for the child psychologically. It gets into better tune, loosens up, becomes more harmonious and lives more joyfully, more secure in its innermost being. It is better centred in itself and protected against disturbing influences from without. Objective conceptions do not manifest themselves at all, which is a sign that the formal imagination is living and working wholly within itself. We shall later see how this is to be explained; for the present the fact is merely recorded.

First of all, as an example of a 'sequence', here are the drawings (Fig. 20 A-F) that a little girl of four scribbled during her mother's absence—and not to the mother's delight—in her housekeeping-book and which by a lucky chance were preserved. The child had occasionally drawn with both hands together before this, usually producing the typical 'breath patterns' that are literally *inspired* by breathing in and out. In this process the motor activity of the lifting and dropping of the arms unconsciously combines with the breath-

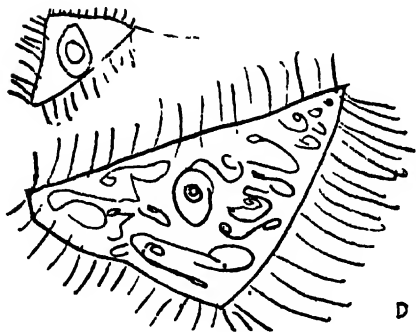


A

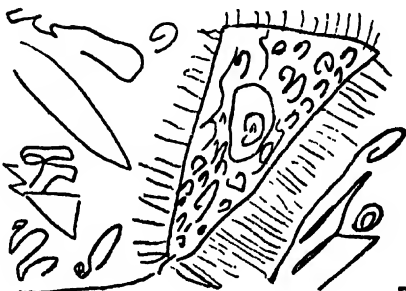


B

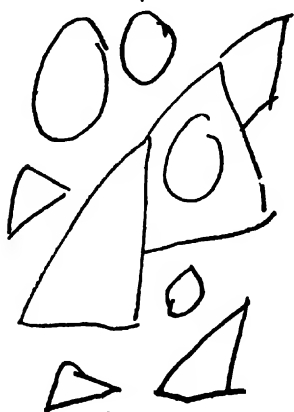
C



D



E



F

FIGURE 20 (A-F)

Two-hand and one-hand scribbles in  
mother's housekeeping book. 4 years  
10 months

## *With Both Hands*

ing-movements, so that from the volute- and mask-like patterns one can almost always tell whether they were drawn on an in- or an out-breath. On the first blank pages of the housekeeping-book we find, first of all, a breathing-out pattern: a kidney-shaped beginning, then a breathing-out pattern with the point of balance set low—bilateral shapes that are, as it were, prints or impressions of the child's biological space, the space in which it breathes. This phase in bimanual drawing corresponds to the spirals and circles of one-handed drawing. The child leaps or flies high with its breathing; it is, as it were, a fluttering and beating of wings that has left these traces. But in the next picture (c) the child is like a dancer who, having leapt high into the air, has just landed on the ground again. From the feet upwards the sense of standing on firm ground penetrates through the whole body; the child builds a 'box' with both hands and then—with one hand!—hops in a zigzag movement through it. The child has left the fluid element and come to land, one might say; it has come from the ocean of air into the firmness and solidity of the realm of *touch*, which is all round its biological space, its body, and against which it bumps at every step and with almost every movement of its hands.

In the fourth picture (v) we see something very odd: the effect that working with one hand has on the basic sense of space and solids. For now the child goes on drawing with its right hand, and as it does so the box breaks diagonally, from top right to bottom left, into two triangular islands in space, a larger and a smaller one. The cubical static quality of the haptic area has thereby been transformed into the tension of the 'energetic area' that we must regard as the balance between biological inner space (the child's body) and the tangible outer world. One-handed activity brings tension and, with it, new movement, into the static quality of the haptic space. At the same time we must always bear in mind that the plane on which we see two dimensions is only the cross-section of a sense of space that has not only three dimensions, as tangible solids have,

### *With Both Hands*

but yet a fourth, which as locomotor energy thrusts against the body in space. This space now finds its final expression in the 'energetic area' in the child's drawing (E).

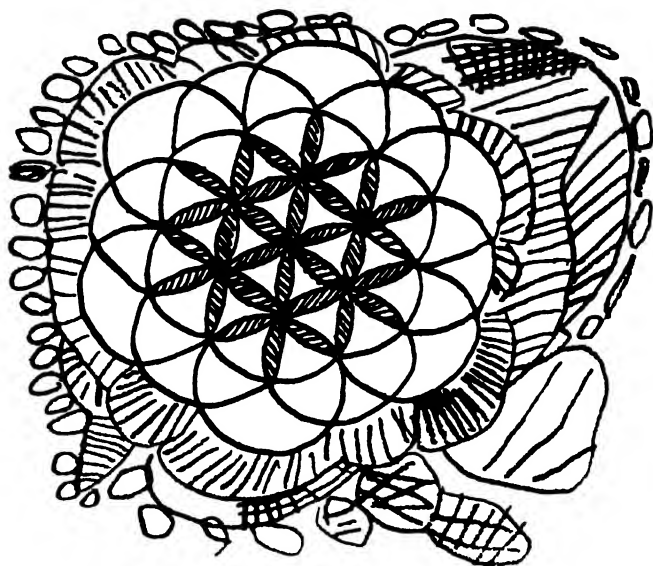
The process is as follows. The two triangles, or spatial islands, into which the box has broken up are immediately felt by the child as being charged with energy and they are 'filled in' with paint: first of all in each triangle a ring-like nucleus is formed, and this then throws out rhythmic curves around itself, filling the triangle to bursting-point. The sides of the triangle itself, however, are regarded as the surface of a solid body; they are covered with a haptic fringe, clearly showing that the shape has been felt as though with the fingers and its form experienced plastically. The next picture shows the progressive dissolution of the haptic space and its 'islands' within the field of energy. The smaller triangle has already dissolved; it has changed into several curves of energy. The larger triangle looks as if it had been melted down or compressed by the energy of the spatial curves.

For now it is only the edge of the paper that hems in these dynamic curves. In the last picture (F) we then see something surprising: the spatial curves have stabilized each other and fill the rectangle of the paper in the form of a 'strewing' of circles, rectangles, and triangles held together by one and the same tension.

This has given us a glimpse of a world of forms such as we otherwise encounter only in physics. In the few minutes during which the child was scribbling in the housekeeping-book it has not only experienced the primal phenomena of biological, haptic, and energetic space and thus discovered the sources of the linear-plastic and the pictorial, it has also run through the four basic orders of ornament: alternation ('breath patterns'), crossing (boxes), the series (haptic fringe), and strewing. So what strikes us as abstract is in reality the most concrete thing we can imagine: it is the child itself, as an organic whole. It is the child's vitality, its breathing, its running, jumping, kicking and sprawling. And yet we are startled by such a

### *With Both Hands*

wealth of pattern and wonder how we can classify it all, how we can reduce it to educational terms.



Four-year-old and 14-year-old in one picture. A 14-year-old's compass pattern completed by a 4-year-old child, adding series of strokes, beads, and crisscrosses in crayon







## V

# A GLANCE AT THE INNER WORKINGS

Many people are still haunted by the notion that the child's artistic development is nothing but a compromise between the picture of reality that appears on the retina, as in a *camera obscura*, and the activity of the hands. At first, so they think, the hand is clumsy and reproduces the image only in very crude outline, but gradually it learns to reproduce the finer details of the image on the retina and finally, at the end of the development, it successfully achieves a faithful copy. It is by no means easy to get this notion out of people's heads, for, first of all, it is backed up by technical ideas that have spread with the advance of modern optics and photography, and, secondly, there is a group of children for whom this theory does seem to hold good: they belong to what is called the *eidetic type*, those on whose retina an image remains for some time even after the thing is no longer there to be seen and who therefore can, as it were, trace it out on paper. The hunters of palaeolithic times, who scratched such astonishingly lifelike pictures of wild horses, bison, and mammoths on the walls of caves or on bone and ivory, were also *Eidetiker*; they were able to reproduce exactly the after-images of the animals that they had seen while hunting, and to do so without any interpolation of memory-images or concepts (Fig. 21). But these same Stone Age artists have also left what seem to be entirely abstract, ornamental pictures, such as the celebrated female figure from Predmost, which is scratched with two hands at

## *A Glance at the Inner Workings*

### VISUAL AND TACTILE EXPERIENCE IN THE OLD STONE AGE

(See also Fig. 22)

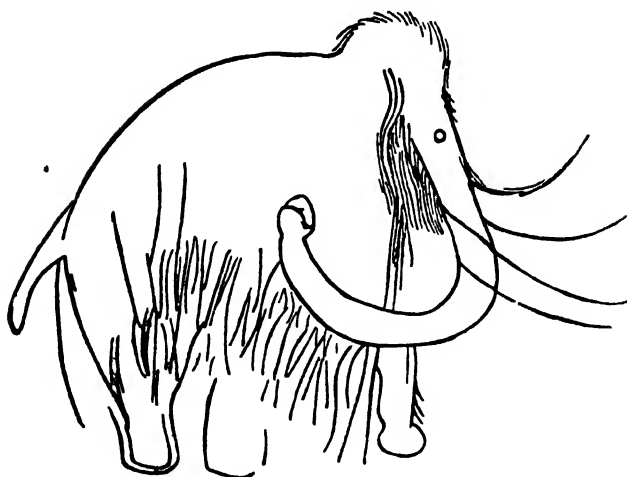


FIGURE 21

▲ 'Optic' picture of a mammoth, from a cave in the south of France. Probably of eidetic origin (reproduction of image on retina). Such pictures were used for hunting magic

once on a mammoth's tusk and which is a representation of the most utterly concrete kind, a record of the tactile experience of a woman's body (Fig. 22). What we see, then, in this primordial art is a discrepancy between the optical picture, directed by the eye, and the motor or haptic picture; it is a discrepancy similar to that between the imitative drawings of a fourteen-year-old *Eidetiker* and the pictures produced by a small child scribbling. The compromise between the optic and the haptic poles, or, as they have also been called, the painterly and the linear-plastic poles, is the formal theme of art history. The Greeks found the 'classical' equilibrium.

In 1907 the physiologist and anthropologist, Max Verworn, published a work, *The Psychology of Primitive Art*, in which he discussed the causes of the great difference between realistic or, as he calls it, 'physioplactic', reproduction, i.e. optically faithful to Nature,

## *A Glance at the Inner Workings*

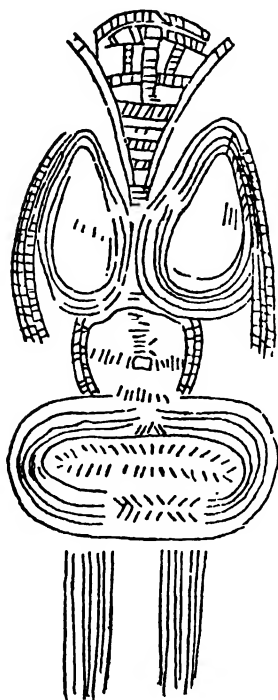


FIGURE 22

Tactile picture of a naked woman. 'Haptic' conception, bimanually scratched on a mammoth's tusk. The buttocks, turned at an angle of 90 deg. to each side, are projected on to the plane. Erotically tinged feeling of body, and likewise magic. The tactile lines are reinforced by cross-strokes at the 'hard' places. From Predmost, Czechoslovakia

and an 'ideoplastic' method of expression, by which he means the predominantly motor and haptic drawing of the primitive and of the small child. In this book he gave a diagram of the nervous system and the nervous centres used in drawing (Fig. 23). Verworn's model is particularly useful to-day, since the erroneous notions brought about by the film camera and other optic achievements of our epoch can best be corrected by providing an equally technical view that does more justice to the facts. At the same time, we must

## *A Glance at the Inner Workings*

of course be on our guard against confusing such 'working models', schematic as they necessarily are, with reality. All that the model is meant to do is help us to reduce such an infinitely various and complicated phenomenon as the process of drawing and painting to something like intelligible order—which we need if we are to deal with the phenomenon in practical terms.

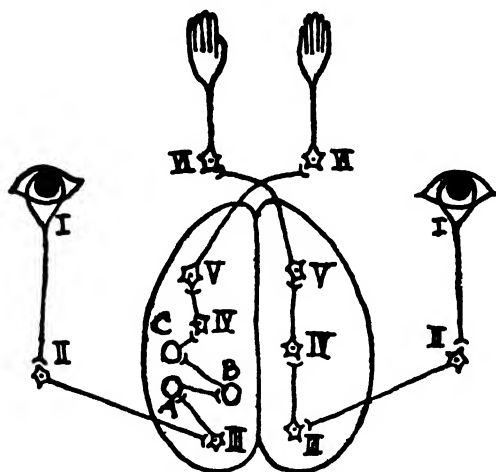


FIGURE 23

In Verworn's model of the brain what we see first of all is a whole series of intermediate stations between the eye and the hand, which clearly show us how long the way is from the realm of images seen by the human eye to that most sensitive and skilful organ of touch, the human hand. The right half of the brain, which is connected with the right eye and the left hand, is, according to Verworn, what produces the processes involved in the kind of drawing done by an *Eidetiker* or 'naturalist'. 'Rays of light from an object fall upon the eye and stimulate the retina (i). From here the stimulus next passes to the first station on the optic nerve tract in the interbrain (ii) and from there to the optic centre in the cerebrum (iii). The pure sensation of vision is connected with the stimulation of the ganglion cells

## *A Glance at the Inner Workings*

in the optic centre. This is the sensory part of the process: perception, observation of the object. In the case of direct reproduction of the sensory image or after-image the stimulus now passes from the optic centre to the area of motor ideations (iv), which are necessary for the execution of a picture—i.e. one that is directed in close accord with the model in Nature—and from here to the corresponding motor centres (v) themselves, which pass it on from the cerebral cortex via the motor station of the spinal cord (vi) to the appropriate muscles of the arm and hand. This is the motor part of the process. Where drawing is done from Nature this process takes place under the constant control of the given visual sensations and is continuously corrected by them. In this case the drawing becomes a reproduction of the object seen, more or less faithful according to the degree of smoothness in functioning that the sensory and motor tracts have acquired through practice: i.e. exactness of observation and skill of the hand.'

On the left side of his diagram Verworn shows the left half of the brain, which is connected with the right hand, and between the stations in the optic centre (iii) and in the area of motor ideations (iv) three stations pertaining to various areas of association (ABC) where the mental perceptions of form are localized that result from an accumulation of visual, auditory and tactile impressions and hence represent something like a 'form-memory'. This association-centre, according to Verworn, is what mainly directs the hand whenever people draw from memory and ideation; and, again according to Verworn, this is predominantly the manner in which children and primitives draw, with the exception of the special case of Ice Age *Eidetiker*. For the child and the primitive draw not what they see but what they know, what has accumulated in their form-memory as a store of inner images.

Thus far Verworn and his diagram. Many people, though they may be keenly interested in motor-car engines, will perhaps think this physiological interlude a bit irrelevant and feel no urge to open

## *A Glance at the Inner Workings*

the bonnet that covers the drawing-engine and take a look inside. And yet parents and educationists ought to know a little—even if only the little that our diagram illumines—about the physiological preconditions of children's drawing and, arising out of that, of pictorial art in general, if they really want to understand their children. Truly *helpful* sympathy is something that must be acquired by work; without knowledge sympathy remains blind, as love does also.

First of all, a critical comment on Verworn. In the style of his time, he always speaks only of motor and sensory components of drawing. Meanwhile, both in physiology and in anthropology more work has been done on the haptic aspect of brain activity, and it has been established that the sphere of touch, the tactile sphere, which is closely connected with the motor centres, is of just as great importance as the motor centres themselves. For since man is a being whose element is the solid, not the airy or the fluid, his movements constantly bring him up against resistances that turn out to be bodies and objects and which imprint themselves on his form-memory. These experiences then flow into the stations A, B, and C, and so form what we call ideas and concepts of things; they are in fact literally 'grasped'. Hence concepts—that which is 'grasped'—are primarily what dominates the ideational life. It is only gradually, when a sure sense of space and body has developed, that the eye—distant vision instead of close touch—takes the lead; for what is acquired in early childhood is only a colourless and lightless skeleton of vision. Later on these experiences flatten out, and this is why most people lose their feeling for true plasticity.

Starting from the hand, let us once more look briefly at the stations in Verworn's diagram. First of all, there is the spine and its motor stations (vi). Here we are still entirely in the world of un-directed reflexes and hence of the purely motor, outside the brain. The small infant's kicking and struggling—a concomitant phenomenon of sensations of pleasure and displeasure—arises in this



## *A Glance at the Inner Workings*

realm. In the next station (v) we come to the cerebrum, that is, to the motor and haptic sphere, which has the function of establishing an equilibrium between the reflex and the limitation of a movement, so producing the crawling and groping child's great adventures. If we contemplate such a motor field of the cerebral cortex, a field extending, in each half of the brain, from the crown of the head to the temple, we see that it begins at the crown of the head with the big-toe station. Then follow the foot and the other toes, then the knee, hip, shoulder, and elbow, down to the hand, fingers, and thumb. Vision, larynx, and tongue are associated with the end of this field, where it borders directly on the region of word-memory. Now we know why small infants are so fond of sucking their big toe: the beginning and the end of the motor region meet in this action, and this must obviously be a source of great pleasure and fun. Station iv, the area of motor ideations, is the motor and haptic consciousness; the stations A, B, and C are the memory reservoir from which this consciousness is kept supplied and into which it pours new experiences. Here we are at the central stations concerned with the inner sense of form, with awareness of space and body, with conception of *shape*. This is the realm that guides the child's early drawing. If this realm is not given a chance to develop quietly and without interference on the basis of genuine experiences, if it is 'skipped' in favour of the optic approach, the child will suffer from a certain withering of vision in the wider sense of the word. Thus it will be robbed of the essential happiness of childhood, which is to hug the world, to have the closest and most blissful contact with it. Its motor energy will be paralysed. 'Don't fidget like that, *do* sit still, oh, *do please* walk in a sensible way!'—all such admonitions tend to paralyse physical experience and frustrate the child's experiments in movement, and hence the motor imagination.

At the next station (iii) we come to the visual sphere, which is closely connected with the association centres and the speech centre. What we see must, after all, be recognized and named by the aid of

### *A Glance at the Inner Workings*

the filing-system of the form-memory. All this, however, takes time to develop in the child. Parents who cannot refrain from the 'What is it?' question would do well to take a look at Verworn's diagram from this point of view. They will then see that this question is nothing but a gear-change from iv to A, B, C, and iii. But they ought to avoid making senseless gear-changes in their child every bit as much as with their motor-car.

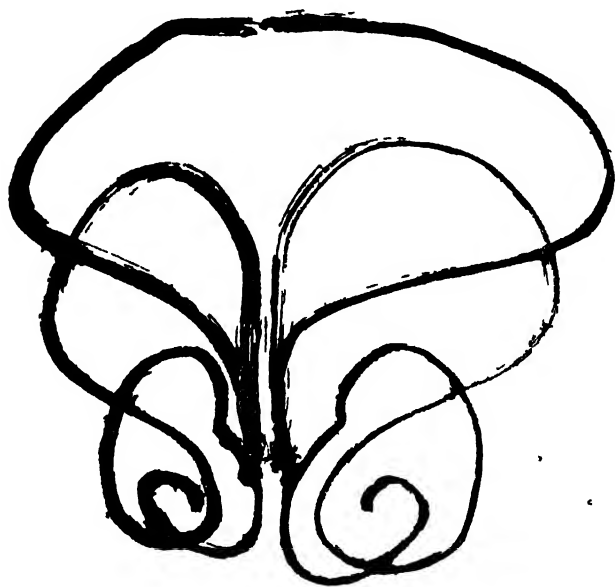


FIGURE 24

'Mummy, I'm in full swing to-day,' 5-year-old Giggi said (*see* frontispiece), and painted this breath-pattern in a few seconds. No interpretation

The question that particularly interests us here is this: What happens, diagrammatically considered, when a child draws or paints with both hands at once? First of all, the motor energy is doubled and the centres iv-vi co-ordinate, which naturally means that the motor sphere (v) becomes dominant. The motor awareness (iv) follows the impulses and rhythm of the motor activity and over-

### *A Glance at the Inner Workings*

lays the association stations A, B, and C. But since these latter are connected with the speech centre, which is in one or the other half of the brain—right-handed people have their speech centre in the left, left-handed people in the right half of the brain—the child creates entirely out of its motor imagination, which, together with the form imagination, keeps on improvising new shapes, shapes that do not indicate objects, indeed cannot possibly indicate anything objective, since at this stage no associations are possible. The child lives in one single, long moment, in a perfect contemporaneity of body and soul. This means that intensified haptic experiences correspond to intensified movement. From the foot upward the whole body-feeling participates in the process of vision. It is only when the rhythmic energy is finally exhausted that the associations overlaid by motor activity can awaken and that patterns may be given names; it also frequently happens, however, that resemblances that positively hit the adult in the eye do not become apparent to the child at all. This is above all the case when a child is 'in full swing' (Fig. 24). 'Is that a house?' somebody asked a child who had begun a sequence of drawings with something that, according to an adult's ideas, had the shape of a house (Fig. 26). '*That's* not what a house looks like!' the child retorted indignantly.

## VI

# A JOURNEY THROUGH SPACE AND TIME

**T**he first 'sequence' of two-handed drawings that we have shown, by a child not yet five years old, was done in pencil on a small sheet of paper, probably while the child was sitting down. Motor energy increases markedly when the child paints on a large surface, either standing up or kneeling on a chair. Brushes are much less inhibiting to movement on paper, since they do not require pressure; thus the motor rhythm is not hampered in its flow through the loose wrists on to the surface. In addition, the colour, which the child chooses spontaneously, is optically stimulating, and so motor activity, haptic feeling, and the sensorium all have an equal share in the work. We should especially note the rapidity with which the 'film' runs—for instance, the ten pictures in the particularly rich sequence done by a child of five years three months (Fig. 25), which we shall discuss in a moment, were done in twenty minutes, so only about two minutes were spent on each picture. If one bears in mind that each picture involved two or three, and in the case of picture viii even four, operations—four colours—the speed at which everything has gone 'hand in hand' is all the more amazing.

The child begins with typical breath patterns (i-v). In the first picture, which begins with a heart shape, that is to say, is evoked by the process of breathing in, the child has begun by choosing yellow. In the second operation it paints dots, in the complementary colour, blue, into loops with the most pronounced curves, as though it felt

# *A Journey Through Space and Time*

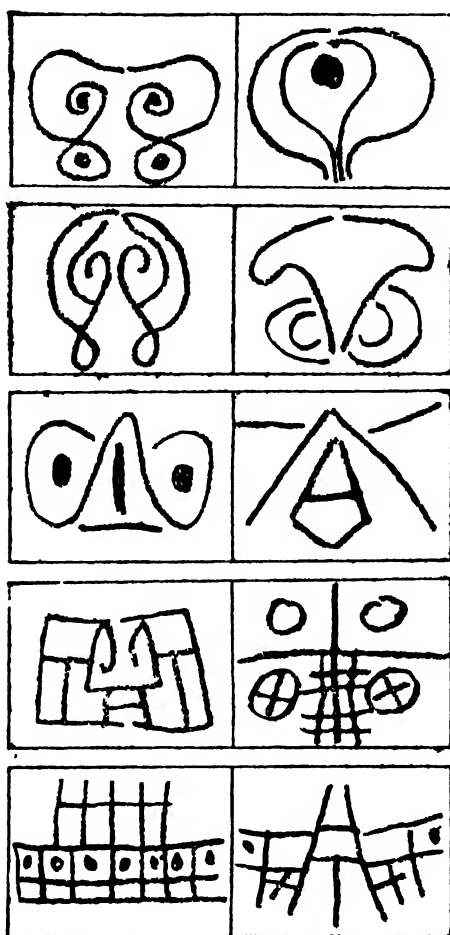


FIGURE 25

that here it were swinging round something as in a slalom. In the second picture two in-breaths and two out-breaths have produced an onion-like pattern. The 'biological arca' has contracted. The child then takes yellow and puts a drop-shaped point of gravity between the brown lines forming the onion-like or heart-shaped pattern. The first picture began on an in-breath, and the second on

## *A Journey Through Space and Time*

an out-breath (kidney-shape). The third picture, in green, also begins on an out-breath. The line forms a 'kidney loop' and, on an in-breath, rises upwards in a volute. The interior space is then stiffened with brown lines in order to emphasize the counter-force that has caused the volutes to roll up. The fourth picture, at first similar to the second, in the second and third operation shows that the body feeling is changing: black and red are used for concentric curves indicating the force that is compressing the breath—the force of gravity. This means that the point of gravity is shifting downwards. The increase in the number of kidney shapes has already indicated this, for in breathing out the child feels heavier, whereas in breathing in it has a sensation of growing lighter and floating up into the air. If we adults are to understand these patterns, we have, as it were, to retrace them by breathing consciously.

In picture 5 the altered sense of space becomes even more noticeable. The breathing-out pattern stands heavily on the ground, as it were on both feet, and this heaviness is emphasized by the points of gravity inside the kidney loops. Furthermore, the solid ground is given shape by a horizontal on which a vertical axis rests. The middle part thus stiffens into a triangle—fluid, airy space gives way to a firm, static tactile, space. In doing this the child, which was previously fluttering and flying like a bird, has taken its stand on the ground; the 'box' phase is now imminent. In the next picture, the sixth, there are no more curves, only triangles and angles; the shape has crystallized into a *straddling*. This is followed, in the next picture in the sequence, by a *sitting* pattern, a broad box-like shape. The stiffening and solidification produce what we may call T-shaped supports; they are inserted into the red box in steel blue. It is the sense of standing that has risen from the feet and now entered the picture. Only in the centre is there still a vestige of breath, as though in a ventricle of the heart. This splendid box pattern, with all its cubic energy, is followed only now, in the eighth picture, by the inclusion of the paper itself in the picture. Up to this point the edge of the

## *A Journey Through Space and Time*

paper—an oblong sheet measuring 32 by 45 centimetres—was not seen at all; it merely set an approximate limit. Now, exactly as in the four-year-old's sequence, the whole surface of the paper is used in the composition. First of all the paper is divided into four rectangles in the cold colours green and blue and stiffened by two boxes or trellises on the lower half of the central axis. The four rectangles then receive circular discs, the lower two of which are stiffened with crosses. In the ninth picture this stiffening tendency brings about a real system of co-ordinates, a yellow trellis with a row of red dots in it; the pattern is reminiscent of a loom or an abacus. In the last picture, the strict system of horizontals and verticals loosens up, so that triangular shapes appear, a variation of the sixth picture but more complex in shape and colour. And here the child stops.

This long sequence has been discussed in particular detail because it is in various ways illuminating. First of all, the journey from the breath space with its curves to the geometrical solidification is made by way of such subtle transitions that we feel we are following an organic process, a process of growth seen in slow motion. Although to the adult's eye there are here various suggestions of such things as masks and faces, the child has not observed any resemblances to objective reality or named any of the patterns, because the motor energy overlaid any associations, any memories of things seen. The child was entirely enclosed in the happiness of the moment.

The process has other aspects too. Without knowing it, in these few minutes the child made a journey through space and time. First it has evolved patterns that are frequently found in Polynesian ornament and dancing-masks. The seventh picture is reminiscent of Egyptian and Mexican motifs, the ninth of the trellis and serial patterns of the early 'geometrical' style in Greek vase painting. We are also reminded of Far Eastern patterns, especially in the last picture, which suggests a Shinto temple or a Chinese ideograph. All this shows that there are latent in the child all the patterns, known throughout history, that various peoples have in various ways

## *A Journey Through Space and Time*

developed and specialized in. Here we see the universal origin of man's formative power. This is also a refutation of the strange theory that the child reproduces the various stages in the historical evolution of styles. The child lives before and outside history, and in its originality and universality it is richer than those styles. For it is only a small part of the infinite abundance of human potentialities that has been realized in the history of the world as it is known to us. With each step the child takes as it progresses through the education that we supply it is at the same time stepping out of all-embracing Nature, which has always been a mystery and always will be.

At the beginning of another sequence by the same child a tectonic form appears, rather like a log-cabin (Fig. 26). As has already been

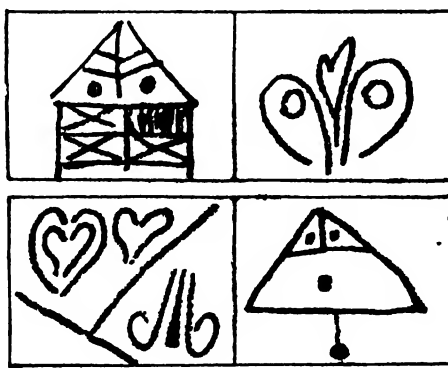


FIGURE 26

mentioned, the child did not see it as a house; indeed, it emphatically rejected the suggestion. The next picture shows a blue breathing-in pattern; the tectile area has been left; the breath area has liquified all solid shapes. In the third picture the child begins with one hand—the right—and divides the sheet into two triangular planes by means of a diagonal; both hands are then used to fill these planes with breath patterns. The 'light' breathing-in heart-shapes are above,



## *A Journey Through Space and Time*

and the 'heavy' breathing-out shape fills the area below. The next picture is a surprise. The child must have felt the third picture to be unharmonious, dissonant, and have felt the need to restore its equilibrium, as it were to plumb itself. This desire for harmony produces a triangular shape, from which in fact a plumb line hangs down, strongly emphasizing the central axis. The sequence has four more pictures, all of them variations on the triangle motif.

This transition from a diagonal composition to one that is triangular is rather like a history of art *en miniature*. What takes a few minutes to happen in the child, that little monad revolving within itself, corresponds to what in the adult world we see as the changes in the taste of the age that extend over decades. For instance, the change of style from the dissonant, high-tension diagonal compositions of the Baroque to the poised, harmonious triangular compositions of Classicism is based on a similar process, a similar shift in the sense of space and body. What we call fashion, a changing ideal of beauty, and succession of styles, is already present in the child, but in the adult world it all happens much more slowly, just as the movement of the great planets through their orbit is slower than movement is in the world of atoms. Max Burchartz, in his fundamental work, *Gleichnis der Harmonie*, refers to the reverse process, the transition, in the High Renaissance, from 'space as axial order' to 'space in diagonal gradation'.

The more intense the child's motor movement is, the less is its inclination to extend in the plane. It keeps to line. 'Mummy, I'm in full swing to-day!' a child exclaimed when it had, in a matter of seconds, produced on paper the lovely breath pattern in blue (Fig. 24). The child said the picture was finished, and showed no intention of entering the plane by means of dots. However, at the end of another series the same child painted three patterns (Fig. 27) clearly showing that such dots are at times indispensable to it. Picture 8 in this series shows that the rotatory sense of space cannot be suppressed even in two-handed drawing. What comes about in this

## *A Journey Through Space and Time*

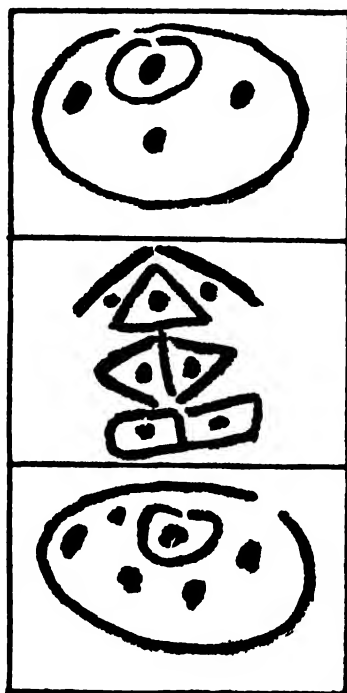


FIGURE 27

A jump from one phase to another. The three last pictures in a ten-picture series. Pictures 8 and 10 show a rotatory sense of space. In picture 9 there is sudden crystallization of the sense of space. Age  $5\frac{1}{2}$ , 33 by 45 cm. Total time spent: 6 minutes

way is something like a small planetary system or a model of an atom, a representation of primal being as it revolves within itself. Immediately afterwards, the child, which has up to this stage been painting in blue and red, takes black, thus coming down to earth, bumping against solid ground. The result is that space crystallizes, the haptic sense of the body asserts itself, and what comes about is a self-portrait of the child as a purely tactile shape. Here we have before us the primal plastic phenomenon: shoulders, hips, and feet





### *A Journey Through Space and Time*

in block-like form. Significantly, the head is missing; for the head does not feel, it sees. And two minutes later? Once again the child has, as it were, leapt high off the ground and is 'rotating'. Here the sequence comes to an end. There are only two minutes between the penultimate and the last picture, and yet there is a world of difference. This is what we mean by a *jump* from one phase to another.

In the course of the child's sixth year the speed at which these sequences of pictures are done slows down. Children leave line more and more for the plane. We see this happening when children begin to fill in planes at the end of a sequence. The patterns become more compact and more tangible. We see such a form, with a low point of gravity, in the colour plate opposite. An adult will see a face in it; this did not occur to the child at all. Another pattern (Fig.



A 5-year-old's phase-picture, black, red, and grey. Changing shapes (breath-patterns, two-handed) are combined into one picture by means of criss-crosses and strew-patterns painted with one hand. No interpretation

#### COLOUR PLATE B (*facing*)

Two-hand painting by a 6-year-old. A late phase with planes painted in. No naming or interpretation by the child.

*A Journey Through Space and Time*

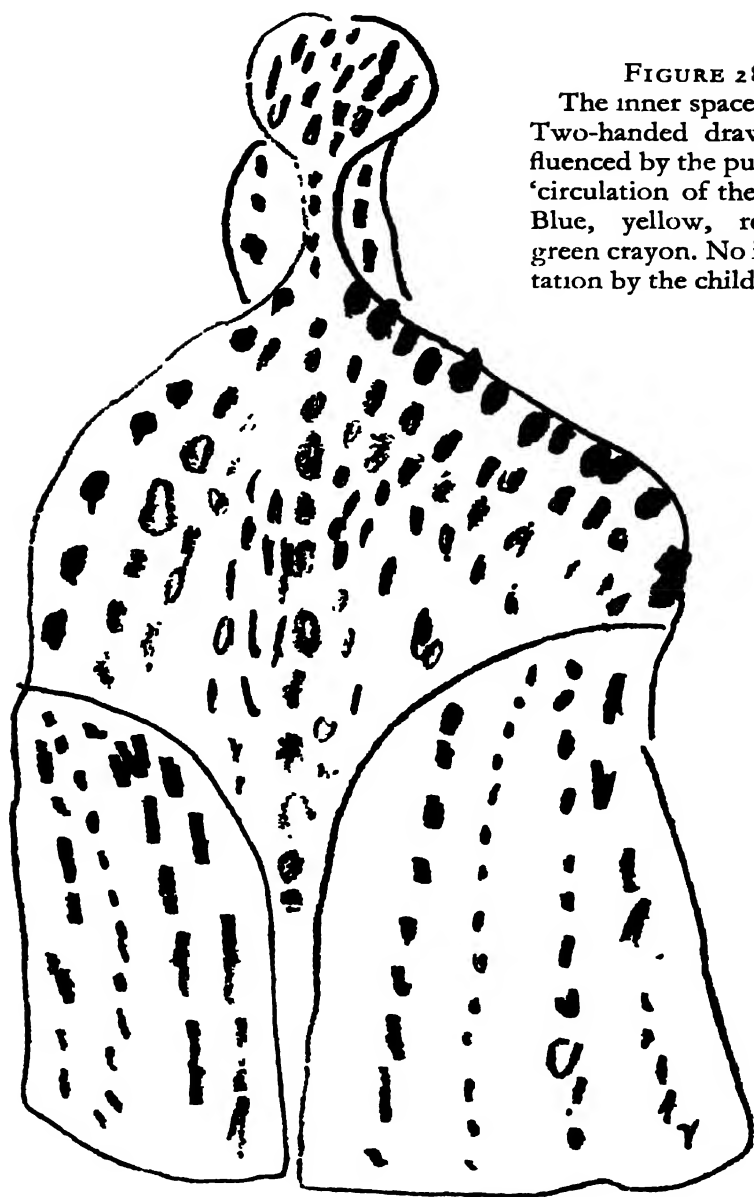


FIGURE 28

The inner space of man.  
Two-handed drawing in-  
fluenced by the pulse, with  
'circulation of the blood'.  
Blue, yellow, red, and  
green crayon. No interpre-  
tation by the child. Age  $5\frac{3}{4}$

## *A Journey Through Space and Time*

28) is an unmistakable representation of the body's interior space, in the biological sense. The circulation of the blood fills the figure, appearing as red and blue series. One thinks of an idol, but the child is still unconsciously free in its formal expression of internal space, and has no associations with any external form. On the other hand, the really beautiful figure done in pencil, Fig. 29, which was drawn independently, and not in a sequence, was probably interpreted by the child afterwards—though we do not know as what it was interpreted, whether as Daddy, Mummy, or a plant. But the fact that it was 'recognized' is apparent from the inscription, the title, that the child has written beside it. The child has not yet learnt to write, and so it does the inscription in pretended writing—using its right hand. We know what this means: the right hand means the left half of the brain: association and speech have awakened. Another time, while the child is 'painting in' a doughy pattern it suddenly recognizes it as a 'person' and fills in the yellow circle of the head with the face, and its fence of teeth, in green.

Here we see the same process as with the cephalopod. But how different this two-handed pattern is from that! There we saw the child's first groping from a primal form into the world; here we see the plasticity of the whole body. Now too—we know what is coming—two-handed fantasies may be worked up, by the playful addition of a head, into 'people', a king, a queen, a prince (Fig. 30). Then, as soon as the child continues with one hand, what comes about is once again a picture that cannot be interpreted. But by this time the child is already able to draw, with one hand, representations of what it sets out to represent, the hand being guided by the concept of form and by the memory. By now the child knows how to do a picture of a person, a house, a dog, or a tree.



FIGURE 29

Interpreted two-hand drawing. Evolved from below upwards on five changes of breath, the pattern rising organically. The breathing begins at the bottom on an in-breath. Top right: the title in pretended writing. Pencil. Age  $3\frac{1}{2}$

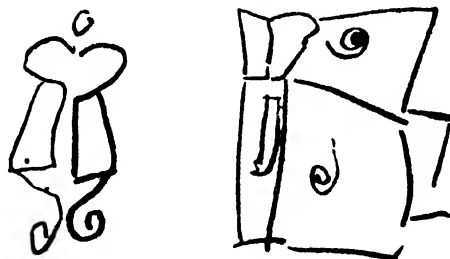


*A Journey Through Space and Time*



FIGURE 30

'King' and 'Queen'. Interpreted series of two-hand crayon drawings. Sixth year. 11 h, 1' cm.



'Prince' and one-hand figure, not interpreted. Conclusion of the series

## VII

### DOT, DOT, COMMA, DASH

**I**n the last sequence we observed a certain 'sharpness' on the part of the child: it has instinctively recognized the heart and box shapes for what they actually are: the breathing body and a solidly based framework. The hand and foot are contained in this; only the head is missing, and now it is triumphantly set on top of the pattern. Of course this is possible only when the child is working on a small scale, when the output of motor energy is low, so that the readiness of the associations is scarcely overlaid at all. All the same, the child does not yet set out to draw a 'king' or 'queen'; it is only the grandiose pattern, suggesting a kingly robe, and the luxuriously voluminous shapes of the 'queen', that turn a feeling into a certainty of being on the way to the royal court. Then of course the prince has to be there too. The addition of the head represents the crowning of the process leading from the abstract to the concrete, from the non-objective to the object. As for making a face, the child has known how to do that for a long time: dot, dot, comma, dash. In German there is a little rhyme of which this is the first line.

The second line of the rhyme is most illuminating. In some districts it goes: 'Isn't this a face?' In others it goes: 'The moon-face now is done'. In the first one notes the amazement that the child experiences in the moment when a configuration of dashes and dots—of abstract forms—all at once reveals a recognizable object. The association, the confrontation of this pattern with a memory image,

## *Dot, Dot, Comma, Dash*

causes high pleasure—mental pleasure. It is quite different when the child rejoices in the completion of a picture that it has intended from the start. 'The moon-face now is done.' Instead of the amazed and almost incredulous question, here is delight in achievement and in the certainty of possession. The form memory evokes the motor ideation, which guides the hand surely, and what comes out in the end is—not, as previously, a gift, a miracle—but what was intended. Thus the second version records a later phase in the child's development, the stage when the child is in possession of ready-for-use pictorial forms, a sort of picture-writing; in other words, it possesses the secret of how to record things. Things are now subject to the child's will; but now too the child is in danger of exploiting its relationship to the thing, and hence to the world, in a one-sided way. It knows what to do if it wants to draw a person, a tree, a house, a cat, or a bird, and in less than no time the symbol, man's image of reality, turns into something schematic, leading an apparently vigorous, but in reality, mechanical, life in a scaffolding of series and criss-crosses.

But has this phase not a positive aspect as well? Must we not let this schematicism, this world of formulae, have its way for the time being? Is the drying up of motor activity, the tendency towards the schematic, not a manifestation of healthy instinct in the child, which is accumulating a store of symbols and by practice acquiring skill in the use of that store? These are justifiable questions. It is quite true, we must not oppose the tendency of this phase; we must not disturb the quiet, busy building up of such a store of concepts by excessively strong motor or sensory impulses. But we must not go to the other extreme either, and explain this tendency towards 'conceptual' drawing and predominantly graphic, comparatively colourless, expression, as something in itself essentially childlike. Although the transitional phase must be respected as such and allowed to work itself out, to get stuck in it is just as harmful to the child as skipping it. And the child does very easily get stuck in it if in its

## *Dot, Dot, Comma, Dash*

first years, at school there is insistence on tidiness, industry, and conscientiousness in its drawing, the standards applied being taken from other subjects such as reading, writing, and arithmetic, or from hand work. Drawing is primarily a game; it is play for the child, not work, and belongs to the same sphere as dancing, jumping, and singing. The driving-force is enjoyment.

In its early years at school the child is often set tasks of an objective nature with which its inner sense of form cannot cope as yet. It then usually resorts to recipes, formulae, and tricks it has picked up from others, and so manages to concoct something that gives no pleasure either to itself or to anyone else. Parents and teachers generally turn a critical eye on the 'unnaturalness' of such drawings. Yet this critical attitude often originates not in real insight, but only in a vague feeling that something is not right. Adults seldom notice that what is not right is precisely an excess of 'rightness' and tidiness, and that a certain degree of artificial 'finish' only glosses over the fact that the child has not really finished coming to terms with things. And since adults have only a vague awareness of this lack of real life and 'naturalness' and do not know how to obviate it, their criticism is concentrated on details, individual shapes, the formulae. 'Now, look—is that really the way it looks?' they ask the child, trying to guide it to see Nature and to observe 'reality' as they do.

The educationist smiles at such criticism, finding it naïve. And so it is, but only in the way in which it tries to help by pointing to Nature. No, that is not the way to set about the problem, for thus we shall again be offending against the first rule we have imposed on ourselves, which is to refrain from direct intervention. Only the child knows how much reality it can allow to penetrate into its inner form without destroying it. Left to itself, it continually supplies its own self-correction, evolving the shape of the human body, a tree, a house, or an animal, with ever-increasing ease and skill. Speeding up this mysterious interplay between the internal and the external

## *Dot, Dot, Comma, Dash*

image by tyrannical commands such as 'Open your eyes! *Look* at things!' means making the same mistake as that for which we have already blamed those who correct the child's speech. Just as adult language is continuously being heard by the child all round it, though the child only achieves 'proper' articulation when the moment comes that only its own inner sense of fitness tells it is the right one, so too the visible world is continuously there around the child as it draws. But the child is in much more intimate and profound contact with it than is afforded by that fleeting glance at the object to which the grown-ups want to force or lure it.

Now for a moment let us go back a year and see how the cephalopod developed further (Fig. 31). There it stands with eyes as big as saucers, a row of teeth like a fence, and tiny feet. For between the head and the feet there has been inserted a long neck and a fat round body. But it becomes apparent that the head is in reality not a head at all, when we notice an odd vestige of the child's primal sense of body: the rake-like short arms issue from this 'head', which therefore turns out actually to be still the whole body. But why have the hands taken on this rake-like appearance? They are tactile fringes such as we know from the four-year-old's 'abstract' sequence. The mouth is also represented as a tactile organ of an extremely sensitive kind. We must be on our guard against interpreting this fence in Homeric terms. What the child has drawn is not teeth but the *feeling* of teeth. Now, too, the child may produce delightful groupings. Previously we saw these cephalopods generally floating in space (Fig. 11) or strewn over the plane, but now the figures stand firmly on the ground, at times forming a balanced composition (Fig. 32). Naturally, not every child can combine the motor energy of the spirals with the boxes of tactile experience and the perpendicular lines of direction to form a picture that retains all the freshness of the earlier stages. Here is nothing schematic; everything is rhythmic and vital, and yet the picture is already a deliberate and accomplished representation of objectivity. The balancing of the two sides of the

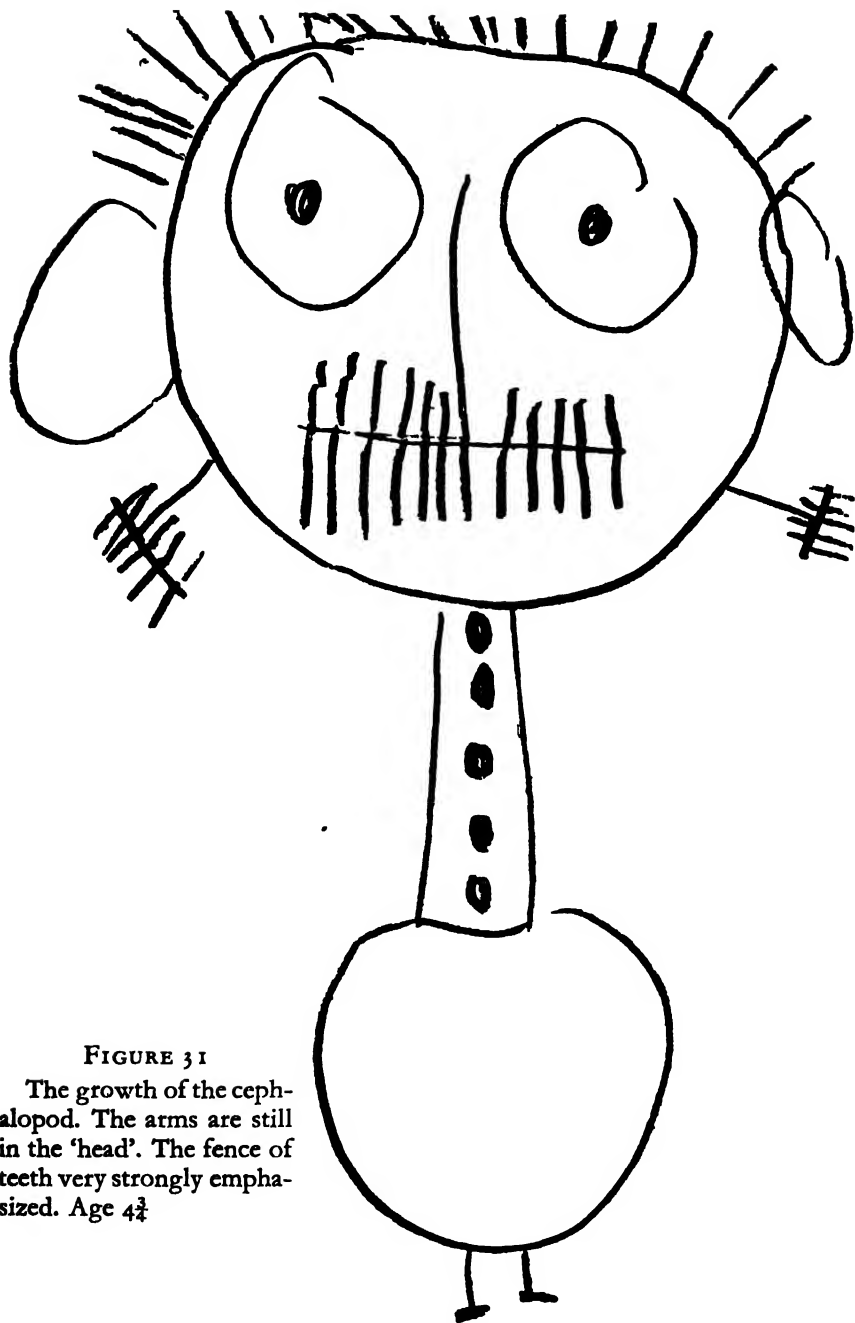


FIGURE 31

The growth of the cephalopod. The arms are still in the 'head'. The fence of teeth very strongly emphasized. Age  $4\frac{1}{2}$



FIGURE 32

“The family”. One-hand pencil drawing. Heads and eyes evolved from spirals, the bodies from boxes. Triptych-like spatial composition. By a 5-year-old who also draws and paints with two hands at once

## *Dot, Dot, Comma, Dash*

picture on the axis of the central figure, with two smaller 'children' on one side corresponding to the larger one on the other, has been achieved with the sureness of something done in trance.

We now know what we are concerned with in trying to see that the child does not become petrified in the schematic phase: we must criticize not the individual shape but the picture as a whole. We must prevent the conceptual phase from becoming isolated from motor and haptic activity and colour, so turning into a pallid play of ideas without blood or vigour. For the earlier phases in the development of the child's vision do not of course disappear entirely when the child sets about acquiring a handy, ready-for-use store of conceptual and memory images. Thus we can observe a remarkable revival of the rotatory sense of space at the beginning of the fifth year. Then the child will sometimes draw a horizontally floating figure, after which it turns the paper, repeats the drawing, and goes on doing the same thing until it has gone the full circle. In this way it is 'flying' through space (Fig. 33). Finally, the child that drew the picture reproduced here—either relapsing into an earlier phase or by way of a key—has drawn an 'angel' in the hedgehog-

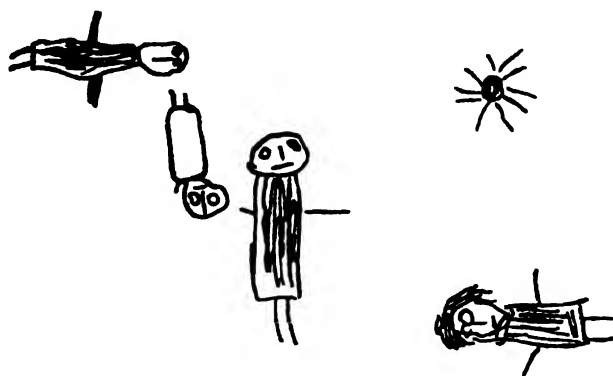


FIGURE 33

Floating child. Rotatory sense of space in a 4-year-old. The figures are drawn horizontally, the paper being turned after each picture



## *Dot, Dot, Comma, Dash*

like or sun-like form we already know. A really subtle solution was arrived at by a child barely three years old: round the horizontal floating figure she has drawn a circle, which then runs or rotates on two 'legs' on a second circle (Fig. 34). Rarely does one see the mys-

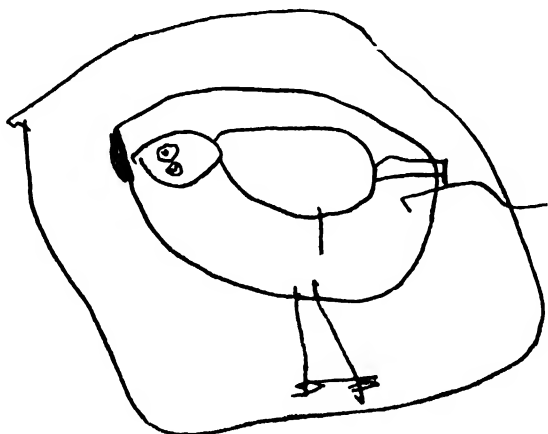


FIGURE 34

Rotating child. The figure of the child is floating in a circle, which runs on 'legs' along a second, outer circle. 3 years 1 month

tery of the rotatory sense of space as beautifully exemplified as in this case. The child, who also draws with both hands at once, finding that the reinforcing effect of this method strengthens her sense of space, projects the latter directly and instead of turning the paper produces out-and-out epicycles. It may here be noted that this was people's dominant sense of space up to the time of Copernicus, and this was the form in which the universe and the movements of the planets were pictured.

Of course, as soon as the child goes to school all such reminiscences of its primal view of the world are quickly and thoroughly got rid of. The adult usually has not the faintest notion what an upheaval is caused in the child by learning to read and write, when the right hand and the speech centre in the left hand of the brain begin

## *Dot, Dot, Comma, Dash*

working together, impeding motor activity. True, motor interest has already been declining noticeably during the child's sixth year. But it is only when it goes to school that its pictorial sense solidifies and indeed petrifies. Since the introduction of Roman script, which belongs to the criss-cross class of ornament and is static in feeling, this phenomenon has become more pronounced than ever. The Gothic script formerly used in Germany, which is rich in curves and belongs to the alternating class of ornament, still had dynamic features; but now 'breathing' is finally suffocated. Besides this, arithmetic encourages the serial patterns, and the loose strew patterns entirely disappear. If in addition the children are made to sit wedged in by school desks, and if there is a teacher who confuses drawing with writing, there is a complete jamming up of development: the child's visionary world is transformed into a system of co-ordinates not unlike graph paper or the bars of a cage.

This phase is a necessary transition; we have already seen it appear in the five-year-old's sequence (Fig. 25, picture 9). But if it is established under the influence of faulty methods of teaching, what very easily comes about is something that may be called typical German children's drawing—something very neat, tidy, and *empty*, (Fig. 34 (a)). However, there are by now quite a number of schools that have got over this rigidity and where the children are guided over the dead point by means of motor and sensory stimulation; thus the connection with the sources, the *fons et origo*, of pictorial creative power is not lost. We can see how children also often help themselves if we compare two drawings done by a child in its first year at school (Figs. 35 and 36). The first picture shows a castle, and one that we know to have been copied from a picture-book. It is not an exact copy, but a translation into more childish forms; yet the unchildlike, complicated composition of the picture has been taken over. This 'optical' view from the adult standpoint was followed some weeks later by the picture of a castle that the child had 'built' for itself in drawing. Here the rotatory sense of space has asserted

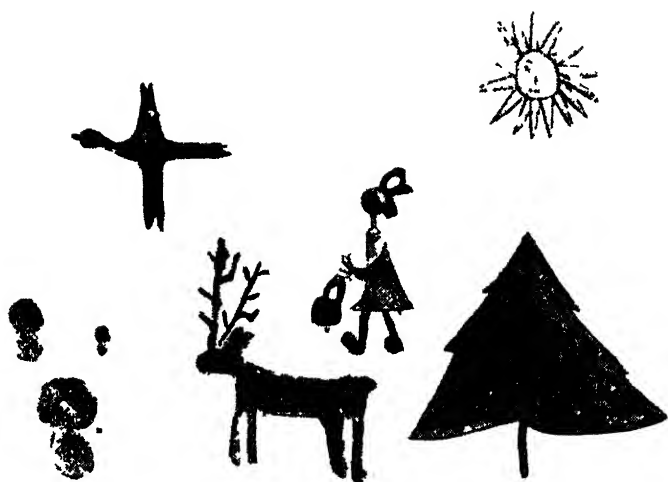


FIGURE 34A  
German school drawing, *circa* 1935



FIGURE 35  
Castle I. Copied from a picture-book, with trees, horseman, and stag. Crayon  
First year of school (1932)

### *Dot, Dot, Comma, Dash*

itself once again. The child builds the castle in rotatory motion, first the house in 'archaic' box shape, then the castle wall decorated with little flags. It would scarcely be possible to show a sharper contrast between the adult's and the child's point of view. Whereas the adult stops in front of the picture, the child goes right into it, forming the space rather as a bee builds its honeycomb. This picture was conceived not by means of the eye, but out of the primal sense of inner space. This space appears for the last time in the twelve-year-old's dream (Plate, facing page 49).

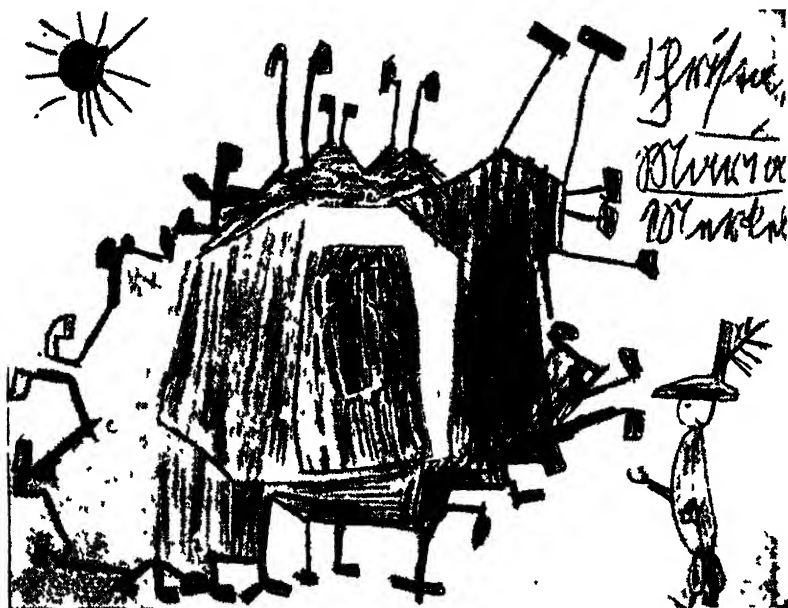


FIGURE 36

Castle II. Imaginative drawing by the same child three months later. Rotatory sense of space asserting itself against optical representation. The little flags on the castle wall point in all directions. The sun is perhaps a reminiscence of the 'angel', as in FIGURE 33. Crayon

## VIII

### WITH DRIPPING BRUSH

Up to now we have said very little about colour, and this for good reasons. We have watched the child's inner vision developing from lightless and colourless scribbling, from an almost blind groping with the hand, and striving upwards towards the light, like a sprouting seed. In this process it encountered the world and the things in it. But while this was happening it was as if colours, the servants of light, were still waiting for the inner eye. Did the child see them when it opened this eye and so rediscovered the inner realm in the external world? Many people will think this an odd question, since there is, surely, so much brightness and colour all round the child from the very beginning: clothes, toys, and picture-books often shout with colour. And crayons, too, are soon at hand and the child begins busily scribbling with them. But all that is not yet a meeting with colour. This happens only when the child begins to paint.

The child's experience of colour, of flowing, pure, shining colour, is sometimes so intense that we can only call it 'colour shock'. There are children who become panic-stricken when faced with colour: this panic is something like a reminiscence of the dazzled horror that the new-born infant experienced when it saw the flood of light pouring down on it. A four-year-old girl, who already had at her disposal a large repertoire of signs for objects, suddenly became speechless again, reverting to early forms that she had long outgrown, as it were stammering and babbling again in such abstract

## *With Dripping Brush*

patterns as circles, ovals, and box shapes. Colour melts the petrified forms down again, as though sacrificing bloodless spectres to the light and the sun. And it is indeed yellow and red, the sunny colours, that at first affect the child most powerfully; after that come blue and green. The three-year-old paints the primal cross in red and green, the vertical in red for erect, warm life, the horizontal in green for the earth as a primal meadow (Colour Plate A).

'Colouring' things—painting in and painting over—soon has a magical attraction for the child. What now takes hold of children is something like hatred of the earlier black and white. Before their eyes the magic wand of the crayon rounds out spectral patterns into the voluptuous plumpness of life, a process that affords intense satisfaction, since for children colour *is* life. There are some educationists who regard painting-books, the manufacture of which amounts to an industry, as a danger to children's graphic development. However, there is no justification for such qualms if apart from colouring ready-made pictures the child has a chance to scribble and draw in its own way. For the point is that at this stage the child still has no desire to colour its own drawings, because the urge has been fulfilled in the graphic process itself, and so for the child the picture is finished. On the other hand, if it sees line-drawings that it regards as representing definite figures and objects, it suddenly feels the urge to fill in the planes between the lines: it is the space between the lines that tempts the child into activity. But this is something quite different from making figures with lines on blank paper.

From the point of view of the ornamental categories, the colouring of a plane is one of the 'strewings' that we have already come across in the four-year-old's sequence. In that rare and precious sequence we have the primal phenomenon of the 'picturesque'. The planes that have come into existence are not coloured, but rhythmically organized from a centre. The *horror vacui* causes the space to be filled with curves that are charged with energy. Let us compare

## *With Dripping Brush*

with this the manner, for instance, in which a painter with such a strong sense of rhythm as van Gogh paints an empty plane. There too we find no regular, smooth application of paint, but a vitality that pours into the plane in torrents, as into a vessel. In the child, of course, 'colouring' may easily degenerate into a mechanical process. For this reason painting-books should disappear from the nursery no later than the beginning of the sixth year. For what now develops is a superabundance of energy and delight in colour that pours into the plane, bursting the linear dams. The child, which previously found its satisfaction in movement, now tries to bring the planes it has created to life as compact shapes; it seals them up with paint, and 'colouring' now belongs to the process of the pictorial series. As a result the child's breathing becomes more vigorous, its staying-power greater. The number of the pictures decreases proportionately. This is noticeable also in two-hand drawing. The number of pictures in a sequence falls from ten or twelve to three or four. Finally, at the time when the child first goes to school, one single picture demands all the energy that was previously distributed over a whole series. So here too we see the same decrease in motor energy that we observed in the case of drawing.

This development makes it clear that the child only gradually comes into possession of colour. We should from time to time allow the small child to, as it were, shout and sing with colour, with a big, dripping brush and on a big sheet of paper, as is done in model fashion in English kindergartens; but we should beware of letting paint become a habit. In the early stage it must remain a rare treat, and one that is enjoyed all the more intensely for that. Nothing is more deplorable than letting a child drown the graphic patterns of its scribbles and crayon drawings in water colour. The child babbles, becomes insensitive, daubs. Hence parents and teachers should not only *give* opportunities, they should also withhold them, seeing to it that there is healthy interplay between motor and haptic activity and the sensorium.

## *With Dripping Brush*

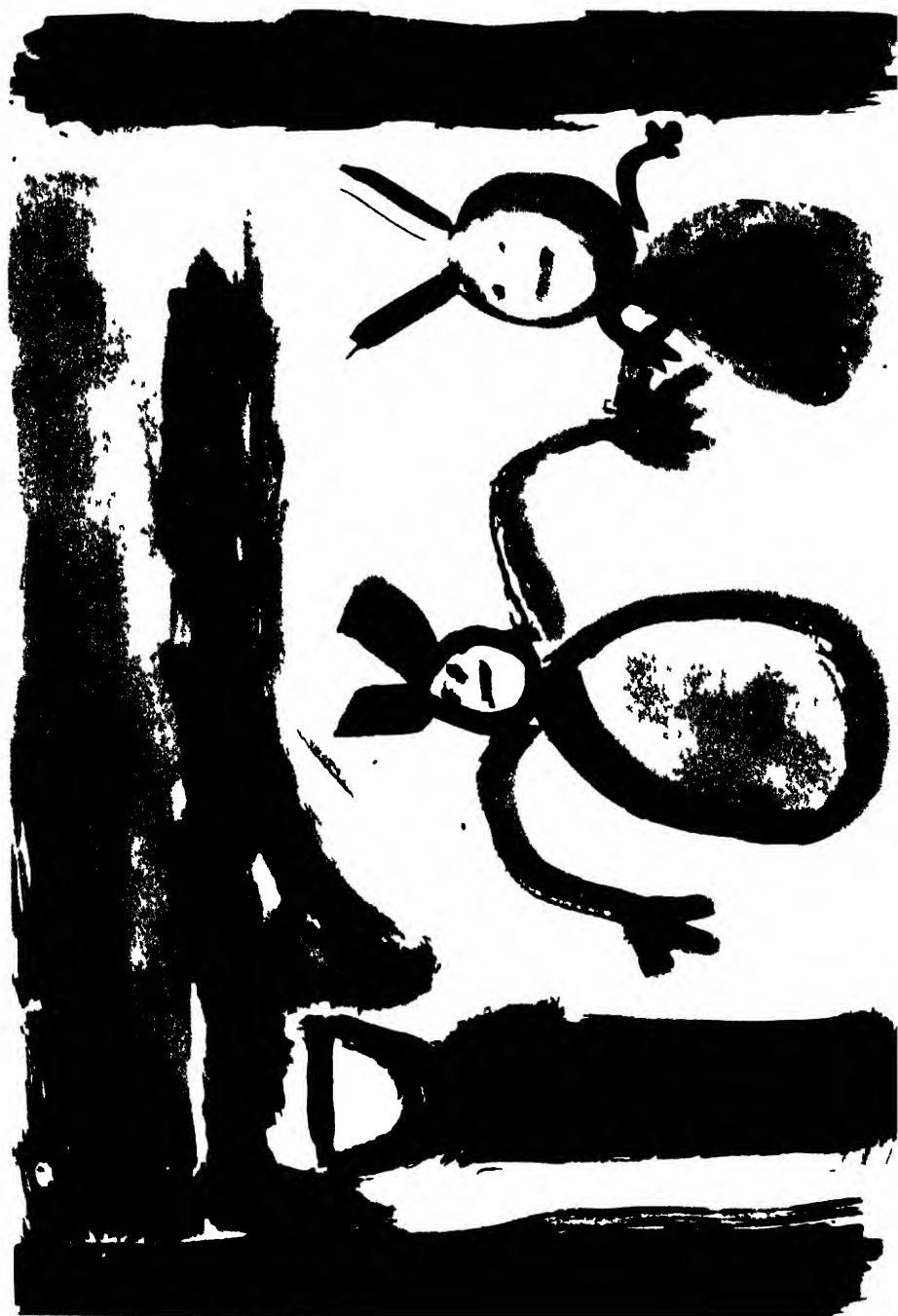
One of the most remarkable effects of two-hand drawing is the harmonization of the sense of colour—the *inner* sense of colour. The close connection between movement and motor ideation, as between motor and haptic activity, arouses in the sensorium a desire for stronger and more definite colour. Now the colour ideations frequently move under great tension and in strong contrasts; complementary colours, and indeed warm and cold groups of colours, are balanced against each other. Children who are nervous or afraid of colour, who are overwhelmed and dazzled by it, are encouraged to use it if they paint with both hands at once. For colour is, in fact, something that tempts and frightens the child, both attracting and repelling it. Colour never leaves the child indifferent, since it represents for it what corresponds to its feelings in reality, to the mysterious life in all things, the friendly and the hostile, the loved and the feared. Many children touch colours with their hands, feeling to see whether they are warm or cold, smooth or rough. Seeing colour for them means touching with the eyes.

As soon as the child has left behind it the colourless, tactile black-and-white scribbling phase, the chief theme in the development of its sense of colour is the way the red-and-yellow group comes to terms with the blue-and-green group. Purple indicates the beginning of a new stage; it is only now that brown, grey, and black as a colour, are discovered, and that the first mixing of blue and yellow causes astonishment and delight. Thus the child moves through the spectrum from the radiant sunshine of red and yellow to the twilight of blue and purple, and between these it sees the world. A three-year-old girl calls her green crayon 'grass pencil', the blue one 'sleep pencil', and the yellow 'sun pencil'. The child knows what colour means, just as it knows what shapes mean.

We can learn much about the child's character and temperament from its choice of colours, and also from the way it applies the colours to the plane. Sensitive children bestrew the paper with dots of paint just like the Pointillistes; more robust children enjoy







### *With Dripping Brush*

letting the paint run freely like juice. In all this the material and the technique are at least as important as the child's psychosomatic make-up. There is a great difference for the child in drawing or painting with coloured pencil or crayons, tempera or poster-paint, and in whether the paper is large or small. Hardness, dryness, softness, fluidity—all these are primal haptic qualities that, in combination with motor activity, now inhibit, now heighten the sense of colour. But motor activity itself is stimulated by a large surface and reduced by a small one. The theme too is connected with the colour. Children should not be expected to complete a picture covering the whole surface with paint until they do it of their own accord; for this belongs to a later stage of development. On the other hand, even in the kindergarten, if children are given suitable material, we shall see them covering a large sheet of paper with paint, right up to the edge, though without attempting to represent objects. In a later phase the ground on which the object is painted is at first left blank

## IX

### THE CHILD'S ROAD

W e have been accompanying the child along a road—the road that has now brought it to the school gates. Here we leave it, not without anxiety. We know that at this point it is at a critical stage in its development as regards drawing and painting, and that it is threatened with the danger of schematism. The child now knows 'how to do' sky and earth as delimited zones at the top and the bottom of the paper. It knows, too, what people, animals, houses trees, mountains and valleys look like and how they can be arranged in the space between the strip of sky and the stage of the earth. Terrestrial things stand firmly on the ground, and up above angels fly, stars twinkle, and the sun and moon shine. The earth is green or brown, the sky is blue, each thing has its place and its colour. Besides this, the child has acquired a small store of ornamental patterns that come in handy for decoration. Wavy lines with dots in them, long rows of starry flowers, and zigzags too—all this it has been able to do for a long time, and one would imagine it to be a proud possession.

But it is precisely this possession that makes us anxious. At first, of course, it helps the child greatly. Now drawing is no longer done according to whim and opportunity; now it is done according to a time-table, whether one likes it or not. Previously it may be that the child did not touch crayon or paint-box for weeks on end, and then suddenly began painting again with tremendous enthusiasm, using up one sheet of paper after another. Now drawing has become

## *The Child's Road*

an activity that turns up regularly among other subjects. Previously the child used to draw or paint whatever it liked, but now it is set a task. At home it was alone or with brothers and sisters, but now it is a member of a large class. Previously it glanced neither to right nor to left, but now curiosity tempts it to look round and see what the others are doing. And in glancing round it picks up all sorts of things, and before long the children average out and something like a class style comes into existence.

And how about the teacher? Let us not delude ourselves about what he can do at the beginning. First of all he must let the children's level of development find an average; he must see what he is confronted with before he can give guidance. In addition, there is the fact that the other school subjects are now in the foreground: they are something new and unfamiliar to the child, claiming its mental energy and its attention to a degree the child has never experienced before. Even if the teacher happens to be careful, understanding, and stimulating, even if he has the best materials, even if he has time to pay attention to each child individually and to the special character of its artistic expression, it is far from easy for him to guide the child past the pitfalls of schematism. Now, as things are in Germany at present, these three conditions are very rarely fulfilled. Overcrowded classes, a lack of proper material, a lack of psychological knowledge precisely in this subject on the part of many teachers, and, not least, the fact that teachers are tied to rules and syllabuses that are partly if not wholly obsolete—all these factors make it imperative for parents not to fold their hands in their laps as soon as the child has entered school, in the conviction that they have set the child on its road and now the school must and can do its part. Without further sympathetic co-operation at home there is no hope that the child's potentialities will be used to the full and that its development will continue rhythmically and vigorously.

Fundamentally, all that is necessary for this purpose is what the parents should have been doing before the child went to school—

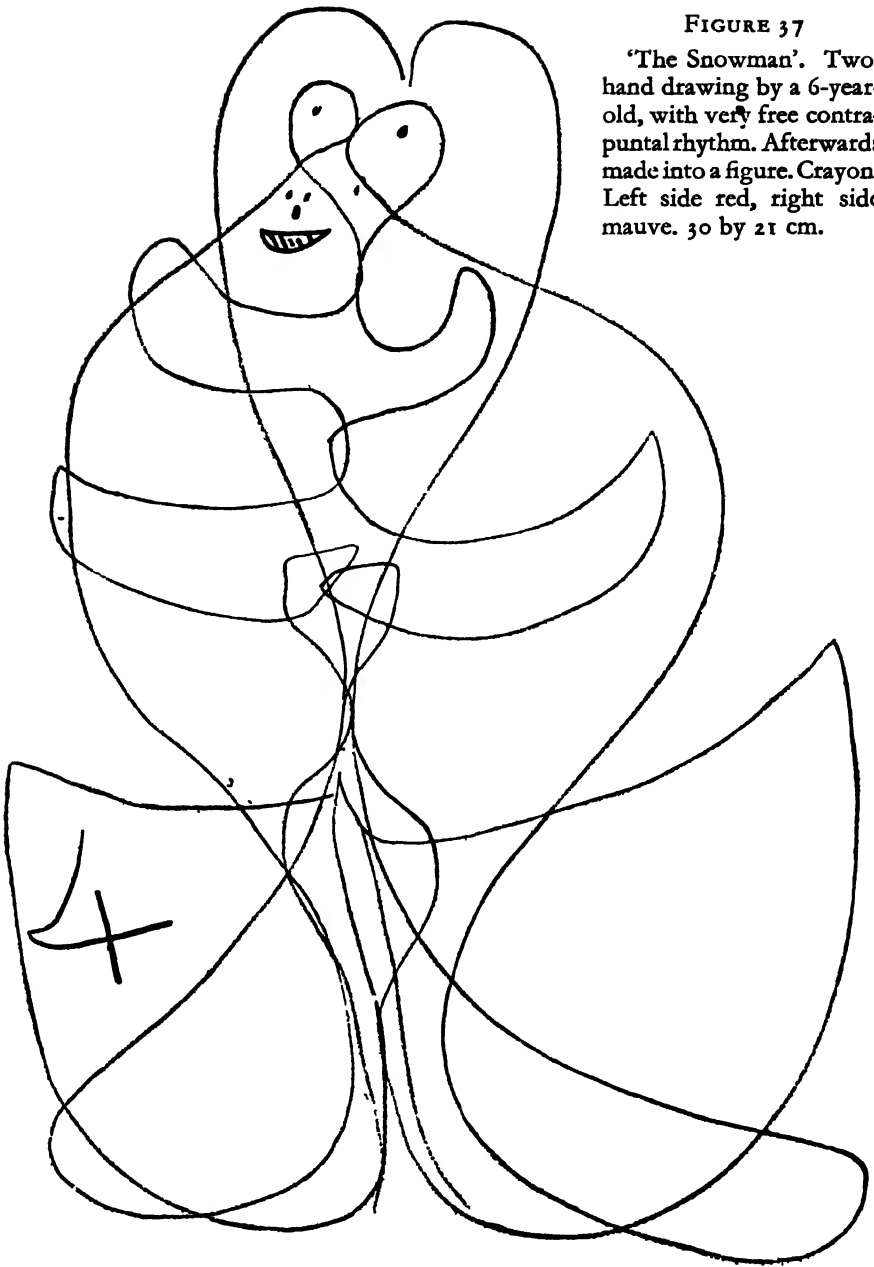
## *The Child's Road*

creating a favourable atmosphere in the home for the child's further development, by taking an interest and providing it with all those materials that the school, for one reason or another, cannot provide. If small paper is used at school, opportunity should be given for occasionally letting rip on a large surface that will stimulate motor activity. If it appears that the haptic sense is not getting full play at school, the child should be given modelling clay. If crayons are predominantly used in class, the child should frequently be given a chance to use brush and water colour, or to try its hand with poster colours on packing paper. If in its first years at school the child has entirely forgotten about the early 'abstract' forms, round about its tenth year it should be given a chance at home (if this is not done at school) to paint again with both hands at once. If it enjoys this, well and good. If it puts up resistance, it is better to wait. The child knows best what suits it.

As an example of such a difference between the school and the home, let us look at the crayon drawing, Fig. 37, done by the child Giggi in her first year at elementary school. The 'altar' is a good example of a complete petrification of form; one is reminded of Egyptian painting. All the objects are yoked into a system of co-ordinates that seems to originate in the written page, the abacus, or the knitting done in the handwork lesson; for there too we encounter criss-cross patterns and unrhythmical shapes. The colour is thin and dry, the line hard and brittle. It is not a bad drawing; on the contrary, it could hardly be better of its kind, but it is not the only kind of which the child is capable. This becomes apparent from another theme that occurred to the child at home, when the parents left a paint-box lying about for it. It was a theme not treated at school, and one more stimulating to the imagination: Heaven and Hell (Colour Plates C and D). Here, too, we have the rigid division, the block-like composition. But how the colour has loosened it up! The form stands up to the onslaught of colour, and the colour frees the form from its dryness. Here instead of precocious knowledge we

FIGURE 37

'The Snowman'. Two-hand drawing by a 6-year-old, with very free contrapuntal rhythm. Afterwards made into a figure. Crayon. Left side red, right side mauve. 30 by 21 cm.



## *The Child's Road*

have childlike enjoyment. Yet the most wonderful thing of all is that the early forms are all still there. They have not been lost. But now they are no longer the expression of the child's biologically con-

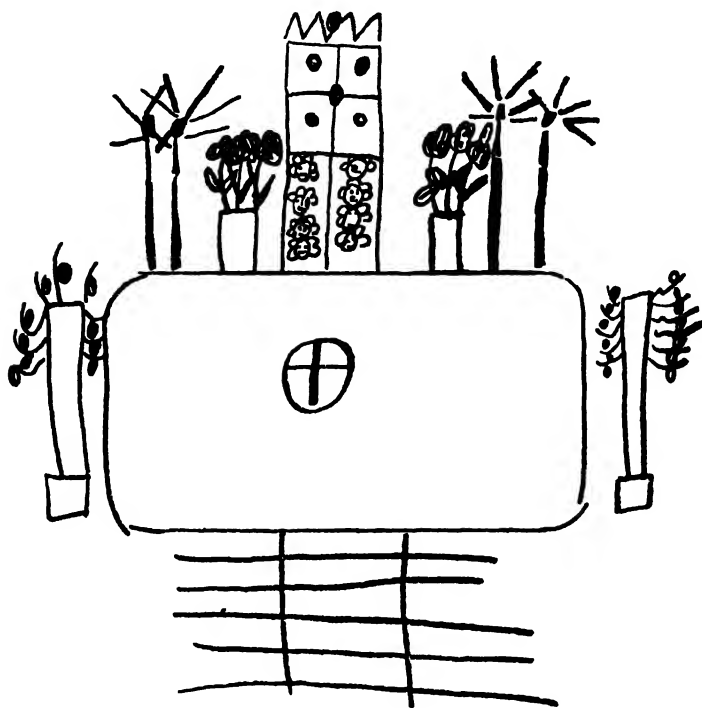


FIGURE 38

'Altar'. School work in first year at elementary school. Normal schematism of this stage (architectural forms!). Crayon. 3oby 21 cm.

ditioned sense of its own body: now they mean something. The undeveloped form of the spiral, as of the oval, has now become the low thing, the uncanny element, the body of the devils. The triangle, on the other hand, which belongs to a later stage and is a spiritual structure, is used for the figures of God and the angel. The devils



## *The Child's Road*

let their arms hang, for they belong to the realm of heaviness. But in Heaven all is joy, so the hands are lifted up. The oven colours, black and red—and are they not hot if one touches them?—dominate in Hell; in Heaven everything is bright, spacious, and cool. Here then the child has made tremendous progress. It has both preserved its past and gained something additional, the ability to reproduce in its own language the new things it has heard and learnt. So now it takes possession of the world. Previously it possessed only forms and formulae.

The child will go on along this road, which leads from the inner into the outer world. And one day the child will be, so to speak, wide open to the outer world, letting it pour into itself, eager to recognize the laws of that world. For, having been left high and dry in the world at its birth, the child has at first only one aim: to get security and knowledge of the world. It wants to be able to rely on what it knows, what it has seen and experienced. But this means that on leaving school it undergoes yet another crisis, the counterpart of that which it underwent on entering school. At that time the child's inner world of concepts became formalized and petrified into schematism, a sort of pictorial script, so that it was locked up in itself and its imagined knowledge; now, on the other hand, it seems to have fallen a prey to the world, to be entirely the captive of the outer world and its conventions. It has lost itself. But this phase is also necessary. Only when the pendulum of development has swung right over to the side of the external world can the human being return again, free to find himself in his own world. For only when the adolescent has found *himself* through art, so gaining freedom, does he know what art is. And when the adolescent who has gone through this preparation one day comes across his childhood pictures and is able to see them as though hearing a long-forgotten tune, then, and only then, is the circle complete; then the child is ripe for that sense of reverence which a great man once called the highest there is.

## *The Child's Road*

But for this it is necessary to have seen into reality and to have come right out of one's inner world. Let us think of the apprentice entering the workshop or the factory at the age of fifteen—if his gaze were not concentrated on the object, if he were still living in the dreamlike state of early childhood, he would be incapable of taking his place there. But once he is firmly settled there, the images of his early childhood can return to him; and this happens as soon as he encounters them in their mature form, in art itself. This future recognition is what we are hoping for when we let children draw and paint just as they like. And what we are concerned with is life itself, and the skills that are needed in it, when we let children stop drawing and painting as soon as they cease to enjoy it. For we want to bring them up to be men and women, not to be artists. Artists discover themselves. It is irresponsible to try to force that discovery.

Thus the child's activity in drawing, painting, and modelling has many aspects according to whether it is regarded from the point of view of the artist, the educationist, or the psychologist. What the artist is concerned with is art and works of art; the educationist is concerned primarily with the child and with relating its artistic activity to the framework of its development as a whole; and the psychologist is interested in trying to discover the laws of that activity and in making them known to the educationist. The dangerous element here is the artist—above all the artist or aesthete in each of us, in the educationist as in the psychologist. In our aesthetic evaluation of children's education we are more dependent on our epoch than we think. Our taste for the primitive and original may be a danger to the child, which is on its way towards maturity and full development, towards objectivity and saturation with reality; this is a road that first cuts across the road of art history in the work of Dürer and Holbein. The great majority of mankind never gets any further than this adolescent phase, in art as in many other respects. The ability to appreciate the formal—and that is to say the artistic—

## *The Child's Road*

achievement of a Dürer is something of which the average man to-day is as incapable as of understanding primitive or modern art. But this average man is, above all, devoid of even the slightest means of forming any aesthetic judgment of his own childish productions, since he has remained on the 'rejection' level, from which the adolescent looks back at his earlier efforts to portray reality with a pitying and superior smile. What is concealed behind the hatred and loathing with which many people pursue modern art is often hatred of their own childhood—their inability to find the way back to their own origins.

This does not mean that the return to early forms of vision in the works of modern masters is the style of our age, to which the child must be guided—if not by direct intervention, then at least by seeing that it has happy years of childish vision. That happy childhood is meaningful only if it paves the way for aesthetic freedom, for the capacity to see and enjoy beauty in the form in which it manifests itself to us. Whether the adult's taste is for Raphael, for Rembrandt, or for Paul Klee, depends on an aesthetic decision that is entirely left to ourselves and which we call personal taste. But we shall not have the power to make such an aesthetic choice freely if our childhood vision is damaged in such a way as to determine our taste once and for all. For the hatred we shall then feel for this or that movement or tendency betrays that it originates in deeper regions of our being; it is the reaction to a trauma. Nobody can force us to think beautiful something that does not appeal to our taste; but it is only our own lack of freedom that makes us feel loathing for something we do not particularly like.

Let us conclude, as we began, with a little story. Round about the year 1500 several artists were sitting over their wine in Florence. They came to talk about the patterns that children and the common people scrawled on walls. 'None of us'—one of them said—'would be capable of drawing a pattern like that. We know too much.' Some of the others disagreed, and they made a bet that they would produce

## *The Child's Road*

something of the kind. Then one after the other tried, and at each picture there was an outburst of laughter. Each time it was apparent that here an artist had tried to draw with an untrained hand and that he had nevertheless found it impossible to forget his skill. The challenger was just about to pocket his winnings when a man got up who had been sitting at the table in silence: he went over to the wall and drew a figure with a few strokes. Nobody would have believed that it had been done by an artist if he had not seen it with his own eyes: this was exactly the way children and the common people drew. The man had won the bet. His name was Michelangelo.

## X

### WHAT PARENTS OUGHT TO DO

Let us never forget: the child's situation is a desperate one. First, in its mother's arms, it was safe and comfortable, looking out into the world with her, in the confident sense of its own security. But then came the crawling stage, after that the struggle with the force of gravity, and finally, when it had successfully achieved the feat of standing and walking, there came the anxiety about balance. And high above this world of chair-legs, table-legs, trouser-legs, and nylon stockings, floating far beyond it, were the grown-ups' heads, divinities sending lightning or smiles down into the depths. Commands and prohibitions, praise and punishment, laughter and wrath alternate up there like wind and weather, and the child yields to them all. It is glad when the sun of grown-up approval shines, and it curls up when the clouds of grown-up disapproval darken its sky. *Understand* the grown-ups it cannot—all it can do is make a sacrifice to them now and then in the hope of inclining them favourably, a sacrificial offering such as a picture.

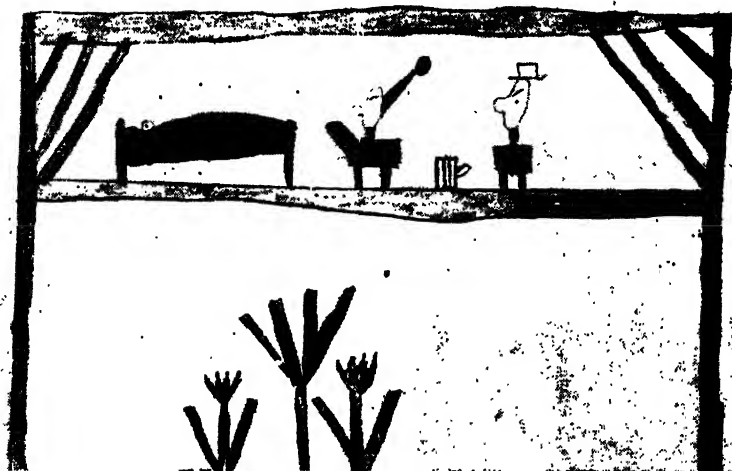
'Oh, it's not so bad as that, surely!' I hear someone say. No, it is not quite so bad as that, but it is bad enough. Nevertheless, in order that the divinities may have some slight notion of how to treat that small creature down on the floor, here are:

#### TEN COMMANDMENTS FOR THE PARENTS OF CHILDREN WHO DO PICTURES

1. Don't regard your child as a Rembrandt or a Picasso, but as a child.

### *What Parents Ought To Do*

2. When your child scrawls on the table and walls, don't scold it, but take yourself to task. It has done so only because you haven't kept it supplied with paper.
3. Don't go and ask: 'What is it?' the moment your child shows you something it has scribbled or drawn or painted.
4. Don't show your child 'how to do it'. Don't rub its nose in Nature.
5. See that there is a variety of techniques and materials available.
6. Don't panic if your child seems to be regressing. Each stage in its progress begins with a crisis.
7. Be glad of its progress, even if it leads away from something you yourself like.
8. Don't be a hypochondriac. Children can stand adults' inevitable trash better than adults can.
9. Learn to wait.
10. Be prepared for anything.



'Kasperltheater' (Punch and Judy Show). Crayon drawings by two Frankfurt elementary school children. Above: dynamic conception; resolution into alternating ornament. Below: static conception. Both 7-year-olds had seen the same performance





## *Part Two*



## NINE PARALLEL CHAPTERS

### I

From the child's point of view it is an accident that nowadays grown-ups happen to have a taste for the things it draws and paints. Previously this was not so, and presumably a day will come when it ceases to be so, in so far as it means regarding 'children's art' as a substitute for modern art. On the other hand, it may well be that this sense of the beauty there is in children's drawing, regarded as a human document, may mean a permanent enlargement of our aesthetic capacity. This new awareness is an indication that a change has occurred in our own practical life, a change symptomatic of forces working within us, without which we might well perish. In the child we see these forces in their natural state, if we refrain from the disturbing interventions made by previous educational methods. We are no longer so naïve as the pedagogues of 'Classicalism', who hung triangles and spheres round the child's cradle in order to make it familiar with 'the ABC of the visual' and 'Absolute Beauty' from its earliest days. Nowadays we know that the pedagogues themselves did not know that ABC and that Absolute at all, and were guiding children only to adopt the style and taste of their time. Our own delight in children's drawing, a special sort of feeling for Nature, has nothing to do with fashion and aesthetic nonsense, as little as with the slogan of 'art for the people'. What we are concerned with is something entirely realistic and practical—a new sense of space, a new sense of life.

## *Nine Parallel Chapters*

In the history of art each time a new sense of space has appeared it has been first of all apparent in architecture. Nowadays this possibility does not arise; on the contrary, the fact that architecture has become a mere technique of building means that it has become the greatest enemy of that sense of space which takes its measure and form from the human being and not from a method of construction. It is a scientific superstition to believe that as soon as there is no longer anything concrete there for people to see and touch, they find themselves in a uniform, neutral, infinitely divisible space without any attributes whatsoever. This 'continuum' is merely a fiction used in the development of the exact sciences and engineering. Real space, the space that people experience as soon as they rely on their senses instead of on a mathematical *pons asinorum*, is something quite different. How different it is can be illustrated by a little story told by the French writer Jean Paulhan in his essay 'Concerning a kind of space that is felt by the heart'.

One night Paulhan was returning to his studio—as sober as a judge, as he is careful to point out—the studio being a one-room apartment where he slept, ate, and worked, and which was consequently filled with all sorts of furniture. In order not to disturb his wife, who had already gone to sleep, he switched on the ceiling light only for an instant and then after a fleeting 'optical' reconnaissance of the room, began his 'haptic' journey through the darkness to his bed. On this journey he discovered a room, a kind of space that was a complete enigma to him until he was suddenly struck by the explanation: 'I am now walking through a picture by Braque or Picasso, through a kind of space that one can experience only if one plunges right into it instead of standing stockstill in front of it like a camera on its tripod. It is a kind of space that at one moment wells up from within and overbrims, at another moment solidifies like a crystal, at yet another splinters into countless particles: space not as an immobile delimiting of events in terms of light, but as a heaving sea in which the modern painter fishes with his canvas as though with a net.'

## *Nine Parallel Chapters*

Well, such experiences through the senses, which should not be considered devoid of intelligence, are worth whole libraries of profound discussion of the principles of art. What Paulhan experienced was simply the awakening of the primal sense of space such as manifests itself in the four-year-old's sequence of drawings, that is to say, something utterly alive, but which nowadays can only be painted and can no longer be built. For we are living increasingly in a dead, technical kind of space arrived at by mathematical calculation. Western man's vital sense of space is steadily atrophying, and here is a danger that is not only intellectual but biological as well, for it means that his living-space and breathing-space are being destroyed from within. In other words, modern art and children's painting have something in common: the vital and primal point of departure. With the child this manifests itself directly as an anthropological reality; with the artist it becomes apparent in a free act of creation, by means of which it is regained not only as an adventure in the human spirit, but as medicine for the soul. Many people do not yet recognize this, because they cannot *remember* or because they dislike the violence that space does to things, which goes to the lengths of entirely deforming and destroying them. Nevertheless, the further this process of development goes, the more it becomes necessary for people to have a kind of art that links them to their origins. True, it is doubtful whether this art can get through to them without their active co-operation. And this brings us to the problem of the adult's own creative experience. It may be that dilettantism in the good sense, not claiming too much for itself, but conscious of its limitations, setting up no values for others, but constituting its own reward, always seeking the primal thing and never the prettified and conventional—it may be that such amateur art will some day be the fairest fruit of a happy childhood in which the natural development of the imaginative faculty is unhampered.

## Nine Parallel Chapters

### II

The scribbling phase is the step-child of educational theory. In a general endeavour to get to school subjects as rapidly as possible, there has been a tendency to overlook this important and decisive phase, in which the child creates the inner space where it then receives and assimilates the world. Nor has any perceptible advance been made in the psychological exploration of this phase since Kröttsch. The fundamental investigations made by modern anthropology into the mental significance of the sense of body have been made use of for the first time in the present book.

A further reason why so little is known about the nature of the scribbling phase lies in the fact that most of the phase is experienced at home. When the child enters school, its 'archaic' epoch lies far behind it, and the teacher, alas, lacks the theoretical knowledge and practical experience that would enable him to make this pre-history useful to the child. So he often has to begin laboriously all over again, instead of being able to link up with the child's past, and many a difficult case remains an enigma to him. And yet his function ought to lie precisely in *not* letting the child's development fall apart into unconnected periods. He knows where the child is going, and so he ought to know where it has come from; he ought to be capable of preserving earlier gains within the later.

Few people know anything at all of the significance of the sense of touch, the haptic sense, in the early phase. Even in such an excellent publication as the pamphlet *Kind und Kunst* in the series *Psychologische Praxis* (edited by Karl Heymann, Basel) the child's development is seen in the traditional way: 'Phase I: predominantly motor attitude: up to third year; phase II: motor-visual attitude: third to fifth year; phase III: visual-motor attitude: fifth and sixth year up to pre-puberty; phase IV: predominantly visual attitude:

## *Nine Parallel Chapters*

second half of childhood, puberty and adolescence proper.' There is no mention here of purely motor activity as rotatory movement, which manifests itself even in the older child's liking for somersaults, riding on roundabouts, doing catherine-wheels, and the like. Nor is there any mention of haptic experience as the first experience of the world and of things. It is no wonder, then, that the deciphering of small children's drawing has for so long lagged behind that of kunciform writing and hieroglyphs.

The lagging of the child's development in drawing behind that in talking, the overvaluation of speech development, the undervaluation of the child's self-expression in drawing or painting—all these are also factors militating against the scribbling phase. And yet the parroting of words is certainly no greater achievement than the child's discovery of a new spatial symbol. Because the child cannot give a name to what it has discovered, the adult unconsciously concludes that the discovery is of minor value. But in reality it is only the adult, with his failure to understand and interpret the symbol, who is to blame for the child's advance remaining disregarded or ignored. Because the adult wants to praise the child if he can, he decides that the child's discovery is 'quaint'. What could stand for innumerable objects—scribbles constitute formal categories just as Chinese writing does!—is reduced to something known and named.

The connection between the basic ornamental patterns and children's drawing is indirect. The child still moves wholly inside the space from which patterns come, which, by the time they become ornament, are already at a second remove, something alienated from its source through having been made into an object with which decorative effects can be achieved. The reason why these patterns can or could have any effect at all is that they symbolize the motor and haptic aspect of our being, and thus stimulate our primal sense of space and body. Basic ornament is not the key to early education; it is the other way round: the scribbling phase helps us to reveal the

## *Nine Parallel Chapters*

meaning of basic ornament. For instance, if with the Greeks the Bronze Age spiral develops into the meander or the running dog, this is an analogy to the transition from the rotatory sense of space to the 'box' pattern and to plasticity (*see Grammar of Basic Ornament*, on page 115).

The series, alternation, and criss-cross are discovered by the child in individual forms; strewing as such it first uses only in as much as it covers a page with shapes that do not connect up with any shape already on the paper—for instance, dots with a circle or a box. From the dimensional point of view, the child first succeeds in managing the linear, the uni-dimensional, in freeing itself from the tangle of space-lines in which it appears to be involved at the beginning of its development. In doing so it moves along a line that turns back on itself, or in a spiral, or in sharply broken straight lines, zigzags, or clearly defined box outlines. These last, however, are always meant to indicate the delimitation of three-dimensional shapes; in other words, the child does not develop from the line (the uni-dimensional) to the plane (the two-dimensional), but experiences the straight line always in connection with the plastic body, with the tangible. The plane is something the child discovers only on paper, as something resulting from a line-movement that has enclosed a plane. But it cannot see this plane until the linear dynamic impulse has died out. The entry into the plane is usually effected by means of a dot, which makes more the impression of a central point in a three-dimensional shape, in a sphere or a cube, than that of a point on a plane. The plane can be filled in from this point of gravity, as happens in the four-year-old's sequence; this then signifies the projection of a three-dimensional shape on to the plane, and not the painting in of a plane. For in the early stages the paper has not yet revealed itself to the child as a plane in its own right; on the contrary, it is still more like a foreign body on which the child's sense of space and body crystallizes, like sugar-candy crystallizing on the string that is dipped into the sweet solution. It is only at the



# GRAMMAR OF BASIC ORNAMENT

Series:



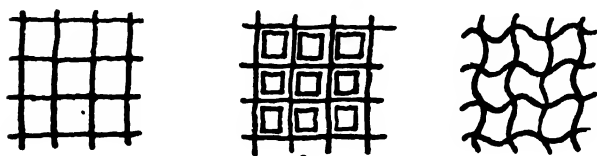
Alternation (flowing):



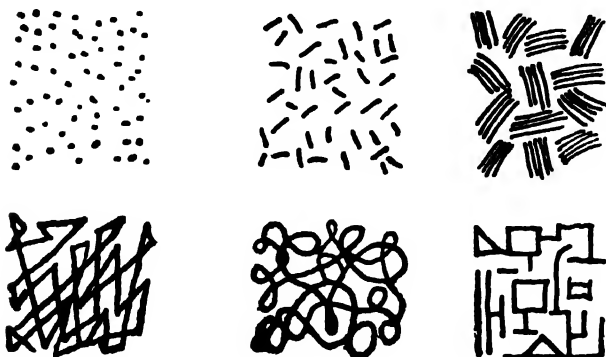
Geometric alternation (haptic):



Cris-cross:



Strewing:



## *Nine Parallel Chapters*

drawing stage, when the child already possesses its symbols appropriate to the laws of the plane, that the sense of inner space ceases to predominate over the graphic plane. The child's own sense of space, which now seems to be dominated by the plane and to have lost the stimulating tension of the relationship to it, is once again strengthened by two-hand drawing, so that here once again the plane plays the part of a section of space. The way we should see the development is from the line to the body, from the body to the point, from the point to the plane, the whole thing being surrounded by space, by a motor, energetic space that manifests itself as strewn, as the pictorial phenomenon of *chiaroscuro*. The space-time sense that the child has in its breathing and its pulse thus appears first in one dimension, then in three dimensions, after that withdrawing to the non-dimensional point, and only from there pouring out into the plane. The forms that in geometry are logically developed from the point are in the monad in a living, organic relationship that we must first of all understand as a biological relationship before we can recognize it as a mental one such as it is when reflected in pictures. The mind is activity, and not a mere *datum*.

In this connection reference should be made to the representation of this primal phenomenon by Paul Klee in a symbolic drawing (reproduced in Werner Haftmann, *The Mind and Work of Paul Klee*, Faber and Faber, 1954, p. 121). The child comes from the cosmic, the four-dimensional, by way of the earth, the three-dimensional, to the I and Thou, to its picture of the world.

### III

The child's interpretation of a pattern has two quite different aspects. Either the interpretation occurs spontaneously, as the result of association with a shape, or in play, as an act of imagination. Either kind of interpretation may occur if we question the

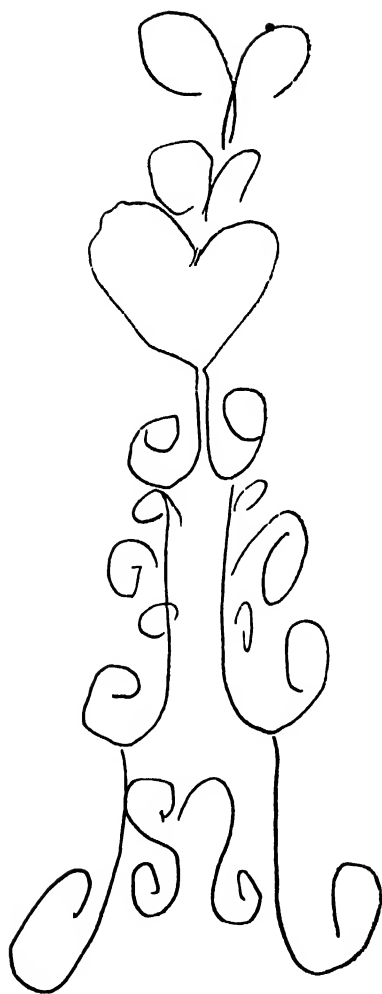
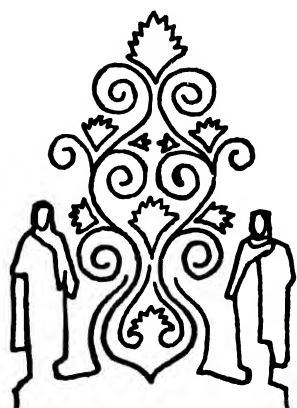




## *Nine Parallel Chapters*

FIGURE 39

Left: Acroterion from the Temple of Aphaia on the island of Aegina (c. 380 B.C.). Breath-patterns with palm-ettes. Right: Breath-pattern by a 4-year old child



child, but in this case play with the resultant toy that the scribble has come to mean usually predominates as soon as the child occupies itself with it as something finished and unchangeable. Then, although no alteration is made in the drawing itself, alterations of its meaning are made, often quite arbitrarily. But what produces the

## *Nine Parallel Chapters*

natural basis from which the drawing—a creation of the mind—originates is always the coming to terms of flowing, mobile inner space with solid, tangible outer space, between the ego and the world in the biological sense. The eye only takes over later: it only comes into the foreground in the process of interpretation, and it is instantly joined by the ear, which listens to the voice. Thus we see that it is primarily the body that gives birth to the drawing: the trunk, hands, and feet are at work, the head (eye, larynx) plays the part of the astonished father and now provides the name. But when the child's own father takes over this part, when, by asking questions, he anticipates the fertile association and so forces something deliberate or playful, the child's mental act of creation cannot be completed. Admittedly there are children who, either slyly or as a result of sheer astonishment at their own achievement, themselves ask their parents what it is that they have produced. In such cases it is for the parents to put up a good show. The child is putting them to the test more often than they think.

Nothing is better evidence of the strict bio-logic of children's drawing than the history of the cephalopod. It is not an entirely new form that comes about here; what happens is that forms we already know combine into something new. The development from rotatory feeling to static feeling (the sense of standing on solid ground) is the development *ab ovo* to the land-dweller. In this process we encounter forms that seem to be more primordial than what we find when an interpretation is arrived at from one form only. From the spiral or the circle to a head or a balloon is not a long way if the eye is there to help. On the other hand, the 'house' (Fig. 16) is developed from the spiral first as a delimiting circle, as a protective screen against the external world, and then inwardly *paced out* in the ground-plan of the rooms. Such a house is a much greater intellectual achievement than the usual box, for it is really experienced, formed from within, and no mere sign analogous to a visible house.

So we must distinguish between drawings in which the child has

## *Nine Parallel Chapters*

kept its primal sense of space, and is creating 'archaically' without the aid of optical concepts, and drawings in which the child has already withdrawn from direct contact with things and is conceiving from an optical distance. Those rotating, crawling, standing, walking, breathing, and pulsating drawings are nowadays perhaps more important for the child's mental development than they were in earlier days, since our technical civilization has tied us down to a purely optical mode of experience, and vision as such can never be an adequate substitute for direct exploration and experience of the physical world. The dreamlike and unsolid quality of our world, a world of the cinema, television, and the illustrated weekly, causes a withering of the haptic sense even in the young child. Where are the parents who from their own experience can still at all understand this kind of solid evidence? Living in a world of mere appearances, the adult involuntarily draws his child into the shallowness and superficiality of the two-dimensional realm that he is used to living in.

### IV

What is it we actually do when we give a child the chance to draw or paint on a blackboard or on paper with both hands at once? We are simply countermanding our previous conscious or unconscious intervention in the child's life, and thus restoring an earlier state. For either we have by precept or practice accustomed the child to relinquishing its original bilateral, bimanual seizing and 'grasping' of the world in favour of using the 'right' or 'proper' hand for eating, shaking hands, and so on, or it has itself specialized in the right or left hand in imitation of the grown-ups. After all, Father holds his pen or pencil in his right hand when he is writing. Nevertheless, there are children who scribble, draw, and paint with both hands, either alternately or simultaneously, that is to say, children in whom the bilateral tendency is so strong that it cannot be suppressed. But

### *Nine Parallel Chapters*

these are exceptions. The rule is that the child develops into a right-handed (about 80 per cent) or left-handed being (about 15 per cent), while a small percentage remains ambidextrous.

It is not the aim of two-hand drawing to abolish the specialization of the hands. It is only meant to prevent certain unfortunate consequences of excessive one-handedness, and to do this only at the moment when the division of labour between the hands, in association with the development of speech, has been definitely established. For the basic sense of space can be set free only when the primal bilateral nucleus of spatial experience can assert itself again—and man originates, after all, in the splitting of a cell! How little accustomed people are to interpreting and re-experiencing this sense of space can be seen in the fact that they call the patterns that arise from two-hand drawing 'symmetrical'. But the only pattern that is symmetrical is one that is drawn unilaterally and then completed by being turned at an angle of 180 degrees and repeated as in a mirror. The patterns resulting from two-hand drawings are simultaneously bilateral. Hence the two sides are never metrically symmetrical, but 'symrhythmical', simultaneously originating in one rhythm, but not equal. There are always definite differences between the right and the left, which are caused by the child's right- or left-handedness (which, after all, is not cancelled out) or by a free contrapuntal play of forces. (Cf. a pattern such as Fig. 38.)

Through the fact that both sides of the body are engaged in this formal expression, the child experiences a liberation from the constriction of being kept to conceptual drawing, which is linked with language. The precondition for this is that the child should make its pictures either standing in front of the blackboard or standing or kneeling at the table, and not be hampered by unsuitable clothing. Tadd got children to draw on the blackboard with white chalk, thus stimulating only motor activity and not the sensorium. It is a good thing to combine this with limbering-up and breathing exercises, since two-hand drawing is a bridge between gymnastics, sport, and



## *Nine Parallel Chapters*

the faculty of imagination. This has long been known to many elementary-school teachers and been used by them as a method of 'loosening the children up' in drawing-lessons when the restriction of sitting in desks has, as it were, wedged the drawing in, when the children are becoming petty and unrhythmical in their sense of form and the colour is becoming pale and dry. Children who are for the first time shown the possibility of drawing with both hands should be introduced to this new activity in a suitable way. One may, for instance, tell them a story about the left hand and how bored it was when the right hand was allowed to draw on the blackboard all by itself, how it complained and is now at last allowed to join in. 'For it takes two to dance, and we walk about on two legs, don't we, we don't just hop round on one.'

The link with sport and gymnastics points to the fact that in encouraging two-hand drawing we are carrying out a sort of mental hygiene that has good results not only where drawing and painting are concerned, but also in the child's development in general. For this reason no kindergarten should be without a blackboard on which the children can have a go at drawing with two pieces of chalk whenever they feel like it. And for adults too, above all for working people, it can be very useful to do bilateral exercises in order to counterbalance the one-sidedness resulting from their work. By introducing such exercises in the Bahlsen biscuit-factory in Hanover Dr. Pentzlin was able to raise the working-capacity of hundreds of women and girls—and above all to increase their pleasure in their work. Bloomfield names 240 kinds of work that require ambidexterity. Dr. Mirgel devised a school questionnaire that makes it possible to ascertain the 'handedness' and 'footedness' of children in a simple way. It is not generally known that most people are right-handed and left-footed, though there are also 'ambling' types, that is, people who are right-handed and right-footed or left-handed and left-footed. Dr. Mirgel's test is as follows:

## *Nine Parallel Chapters*

### 1. HANDEDNESS

- (a) Repeated hand-clapping. Those who clap left on the right hand, keeping the right hand fairly steady as a resistance, are left-handed. Those who do it the other way are right-handed. Those who move both forearms more or less evenly are ambidextrous.
- (b) Throwing a ball, with each hand in turn. Dexterity or sinistrality can be seen from the movement of the wrist.
- (c) Taking a brush and pan in order to sweep dust from the floor into the dust-pan. Left-handed people take hold of the brush with the left, the dust-pan with the right.

### 2. FOOTEDNESS

- (a) Kicking a football, according to whether it is done better with the left or right, or equally well with either foot.
- (b) Jumping over a rope, according to whether by running up to it slightly from the left, from the right, or straight. Jumping off the ground with the left or right leg or equally well with both.

### 3. FINGERS

According to whether when the hands are clasped the fingers of the left hand are put over those of the right, or vice versa.

Dr. Frankel links the decay of handicrafts since 1850 with the abandoning of the custom of changing the hands. Dr. Mirgel regards the increasing present-day 'one-handedness, and similarly one-brainedness', as the cause of our having lost our natural sense of space, which has led to the imitation of historical styles in architecture. The fact is that even in this century ambidextrous work has been done in folk-art. For instance, until quite recently in Transylvania jugs were painted with both hands at once, and embroidery was designed in the same way. In this connection reference should be

## Nine Parallel Chapters

made to the ancient game of cat's cradle (*Fadenspiel*), which plays a part in the development of ornament among primitive peoples, and probably also among the Germanic peoples. 'It is possible', Ilse Kattenstidt writes in her little book *Fadenspiele*, 'that drawing with string was the first form of drawing, being easier to do than drawing on stone or wood. Drawings on stone can, after all, only show the various stages of an event in a series, and a great many pictures are needed, as in a film, in order to show the whole action.' Indeed, cat's cradle—which according to a Pelew Islands myth is the invention and gift of the gods—is very closely related to two-hand drawing. In both cases there is bimanual action and a multiplicity of bilateral series of lines. But cat's cradle has one great drawback: all the patterns are criss-crosses (Fig. 40), which means that the linear

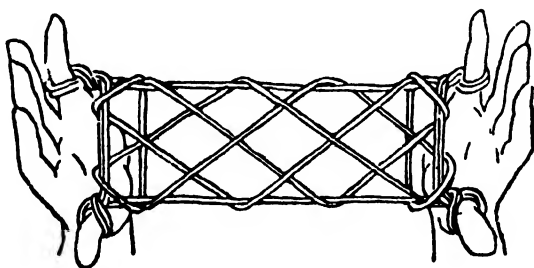


FIGURE 40

Cat's cradle. Concluding pattern: The Great Gate.

imagination is fixed in certain forms. Still, since this game involves visualizing abstract motifs, it is a valuable preparation for and complement to two-hand drawing.

As is evident from the Transylvanian folk-art previously referred to, bilateral painting and drawing plays an important part in ornament. In bilateral ornament the living, breathing human being does, as it were, stand upright in the pattern, whereas hitherto the movement has been unfolding or running (the running dog!). If one

## Nine Parallel Chapters

asks what features determined the character of classical Greek ornament, and what made it superior to all other forms of ornament, one finds that its importance lies above all in the fact that here man is the measure of ornament as of architecture. Whereas the pace of modern man's seeing and thinking is set by the camera and the calculating-machine, with his body acting merely as a stand for the machinery, the Greeks, while they were building, never forgot that they were *physis*, partaking of living, animate, breathing Nature, that their hearts beat rhythmically and their chests rose and sank rhythmically. But even if they had forgotten this truth in concentrating on the principles of geometry and proportion, they would have been reminded of it by their ornament, for it was nothing more or less than of that pulsating, breathing, striding life projected on to architectural volumes and planes. Out of that realm where no external sense-perceptions penetrate, the realm where those vital processes take place which crystallize the fleeting impression into a permanent vision, their ornament emerged clearly and purely into the light of day, into the bright and variegated world of visible objects, creating order out of that bewildering abundance. For ornament, 'cosmos', simply means *order*. Hence Greek ornament reaches its peak in the breath-pattern, the acroterion, which stands high upon the temple as the symbol of divine *pneuma*. Here we see the same heart- and kidney-forms that our children make when they play with both hands at once (Fig. 39).

What does this mean? Does it not suggest that it was a tragic misunderstanding to imitate the forms of Greek architecture and its ornament in a world in which architecture was bound to become pure construction, something that would be best left to build itself, as the crystal does? But this very misunderstanding shows that there is something alive in these forms that appeals to and is alluring to man even after all these centuries, because his own humanity is sunk out of reach. What is the *kumation*, the 'little wave', as the Greeks called it? Egg-moulding? This term in itself reveals the misunder-

## *Nine Parallel Chapters*

standing; it is a silly answer to that silly question which seeks an object. The *kumation* is the wave of man's own breathing, the breath-wave of which Empedocles speaks. And acanthus? How does any leaf arrive at such high honour? Two-hand drawing by children gives us the clue to how we should see it. The heart- and kidney-patterns zigzag and become lobate when they run up against something solid. And has any art historian ever tried *breathing* the Romanesque capitals of Paulinzella? Children could teach him.

All this means that what can no longer be built—all that rhythmic vitality, all that has had, for truth's sake, to be ruthlessly banished from the severely metrical, mathematical space of modern architecture, on the grounds that it is superfluous decoration and mere curlicur—is something that pertains to man as food and drink do, as nourishment for his faculty of imaginative experience. So we shall let children create and experience the order of pattern themselves; for that order is indispensable. In this way the world and history become their own. What comes to them from a long way off, or from a long time ago, will then find the soil prepared for it; some day they will be able to assimilate it and so to love and understand it. In Napoleon's day Herbart wrote: 'What history has hitherto taught in various ages the present will some day represent all at once, in all its multifariousness.' This view led first of all to a hotch-potch of styles, to the imitation of historical forms, and hence to the loss of all form. To-day we get a glimpse of what the philosopher meant.

## V

Since Verworn no work has been done on the physiology of drawing and painting. His diagram, which has been available since the beginning of this century, has been rejected by the experts. It has been regarded as involving a biological approach that could at most disturb aesthetics, but not advance them. Nowadays we have

## *Nine Parallel Chapters*

moved so far from the age of Haeckel that we can make use of diagrammatic ideas of that age without being at their mercy. There was at that time a habit of very exact observation and a taste for explaining man by means of Nature, since man was after all, as they used to say, 'simply part of Nature'. Meanwhile we have become somewhat less naïve. We know that man cannot be entirely explained in causal terms, and least of all by substituting the magical word 'Nature' for the unknown quantity  $x$ . But that is the very reason why we can enquire into the biological conditions of man's existence without a qualm. If we do not so enquire, we run the risk of making a mystery of everything and hence remaining no wiser than the rationalists and all those other solvers of the riddles of the universe.

Drawing and painting are activities bound up with definite physical conditions, which often manifest themselves as style-formative elements in a picture. A keyboard is not in itself music, but without keys no piano-music is possible. For the same reason it is useful for us to know something about the physiology of art. Above all it can help us to get over a merely historical way of looking at things, and also to get over the sort of aestheticism that applies the standards of subjective taste to anything and everything. Drawing and painting are primarily an anthropological phenomenon, inextricably bound up with the human state as such. *Homo sapiens, homo designans*. Hence the sort of aesthetics that is bounded by the outlook of a particular epoch can never provide us with trustworthy standards to apply to this phenomenon within the framework of education.

Verworn's diagram has the great advantage that it confronts us with basic data of our own nature as human beings and forces us to analyse them. These data originate outside and prior to history, as the child's life does, and thus make it possible for us to view the temporal course of things as an unfolding of universal human attributes. For instance, the shifts in fashion, in intellectual and social movements, and in taste are bound up with physiological conditions that sometimes assert themselves so violently as to cause

### *Nine Parallel Chapters*

an abrupt change of taste. One can in fact speak of a dialectic of public taste, which creates revolutions. One good example is the transition from the first stage of Art Nouveau, with its 'biological' sense of space, its breath-patterns, curves, and loops, to the second stage, where tactile space becomes manifest, stimulating a sense of the static and plastic. Ahlers, the first historian of Art Nouveau, wrote concerning 1902, that year of transition: 'Just as children's imaginative play is followed by a phase of soldierly marching in rank and file, so from 1902 onwards the dynamic and mobile phase, the gliding and dancing of line, form, and colour, was followed by the immobile abstract figure, rectangle and circle, rhombus and oval.' Here was a similar geometricizing of ornament such as we have observed among the Greeks, who crystallized the fluid, organic ornament of Mycenaean culture in haptic, static space; one might say that the Cretan style emerged from the water and became a land-dweller. It is no accident that after 1902 we see genuine haptic sculpture appearing (e.g. in the work of Maillol), and the discovery of original Greek sculpture.

It is not necessary to provide further examples. It should be pointed out, however, that art history has a biological opposite number that insists on being taken seriously. All the one-sidedness of taste—and every style, to say nothing of every fashion, is one-sided—sooner or later causes a need to 'turn over on the other side' for a change. This is as true of adults as of children. In children we call this one-sidedness 'jamming up'. It can be recognized by the fact that the child specializes in favourite pattern and pet motifs, and seems to be caught up in them. In two-hand drawing one can see children who go in exclusively for the criss-cross, all patterns evolving in the shape of the rectangular 'knot' as, for instance, in Raphael's altar of the Disputa; others, again, cannot tear themselves away from breath-patterns. Here the child can be helped by being stimulated to discover the missing phases. It would be utterly wrong to explain this away in terms of constitutional variation; it is

## *Nine Parallel Chapters*

in fact a sign of faulty development and thus something unhealthy. The healthy child goes through all the phases. If we leave the child to such one-sidedness, which is always the result of disturbances, it will lose the universal nucleus of its basic nature—in other words, its most precious possession. The adult has to specialize quite early enough in the highly developed division of labour we have in our modern civilization: it is only by virtue of that primal universality in him that he can live as an integral human being among other human beings, and not merely as a person associating with professional colleagues.

### VI

The adult can better understand the patterns that children produce in two-hand drawing if he tries the experiment himself. He goes up to a blackboard, say, takes a deep breath, and tries, as he breathes out, to begin the lower volute of the kidney-shaped framework of a Greek palmette, and then, breathing in, to round it off at the top, rather like an egg (Fig. 41). He will then himself feel the palmette as a repeated lifting and singing of the diaphragm. The palmette was a favourite embroidery pattern with Greek women, to be worn on the breast (cf. the Locrian peplum in the Louvre). One can also follow with both hands the curve or wave of the breath that



FIGURE 41  
Palmette from Olympia.



### *Nine Parallel Chapters*

is inserted between the series and the criss-cross forms in the ornamental order at Olympia, and one will distinguish clearly between the heart-form that goes with the in-breath and the kidney-form that goes with the out-breath. And here we have a dactylic breath-rhythm in which there are two expirations 'with flickering diaphragm' to one inspiration. From this it is clear that the Greeks experienced their ornamental patterns physically, enjoying the three forms, series, alternation, and criss-cross, as something like polyphonic music. The arrangement is reminiscent of a musical score (Fig. 42). The haptic solidity is stressed by the formation of little boxes inside the criss-cross.

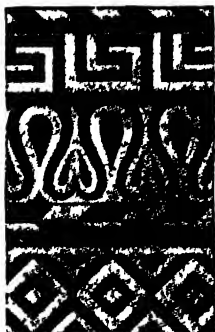


FIGURE 42

Order of ornament with dactylic breath-patterns, from cornice of Temple of Zeus, Olympia.

Having prepared himself by means of such exercises, the adult will be able to interpret the patterns he finds in children's two-hand drawing. These patterns almost invariably arise from the realm of the living organism's primal, fundamental experiences of space and body, and the child's mental achievement in this is at first small. No other method goes so far into the region of immediate vital rhythm, so close to dancing and gymnastics. And here lies a danger similar to that of wild flooding with colour. In the latter case the sensorium

### *Nine Parallel Chapters*

is over-stimulated, in the former motor activity. Yet awareness of possible exaggerations should serve only to remind us constantly how powerful this method is; it should not make us doubt the value of using it sensibly. The child has achieved something intellectual in the moment when the patterns, the rhythmograms, it has produced, which are primarily nothing but traces of a journey it is making—generally it is good enough to let the child draw them on the black-board, whence they instantly vanish again—are suddenly felt to be figures, i.e. when the motor activity slackens and solidification occurs. This late phase saves the invaluable process of interpretation, recognition, and naming, with the accompanying astonishment that the child experiences, for a time when the child often seems to have to a great extent acquired conventional skill (Fig. 38).

This incidentally refutes the objection that patterns without a meaning are foreign bodies in the child's world, where everything must receive a name in order, like Rumpelstilzchen, to be deprived of its power. The only things that are nameless—so the objection goes—are the immeasurable, the monstrous, the unspeakable. 'Really, this is the last straw, if even children are supposed to paint abstract pictures now,' an indignant adult said to me. 'Yes, indeed,' I retorted, 'it's the last straw for us to clutch at.'

Our age, an age of science and technology, of calculation and classification, is the wrecker and destroyer of childhood things. The child lives next door to the unknown; it lives with mystery. Those who try to rid it of 'shuddering' are only depriving it of joy and light. Those who restrict the child to the known and named are separating it from the ground in which its being is rooted, making it into something deformed and stunted that can never become 'grown-up' in any true sense.

In practice we rarely run up against problems in using the two-hand technique as a means of bringing the child back into contact with the original and incomprehensible thing in itself. Children are amazed and delighted by the unsuspected abilities that they feel

## *Nine Parallel Chapters*

stirring in themselves. So for the most part they rapidly get into the habit of producing patterns that 'don't mean anything', for they forget about interpretation in their enjoyment of the movement, later on it comes to them suddenly, like an unexpected present.

The question how far objective motifs—not only later interpretations—might become fruitful in the child's subsequent development is one that cannot easily be answered. Todd used to get the children to draw leaf-patterns with both hands. But conceptual work can lead to the mere acquiring of skill. On the other hand, older children seem to be capable of looking at a leaf for some time and then, as it were, turning themselves into it and breathing it out again on to the blackboard. The after-experience of a bilateral form in its natural organic structure can thus bring the child very close to Nature, to a sense of what it feels like to be a plant, and hence to experiences that are impossible in one-hand work.

The method's point of gravity is, nevertheless, to be sought in the physio-biological realm, in the possibility of causing the body to partake directly in productive imaginative experience and vision and thus to see even with the feet. The primal phenomena of the linear and the plastic, of the rhythmic and the metrical, of the dynamic and the static, nowadays more than ever need to be deeply rooted in the human body. As the burden increases, so the foundations must be built the deeper. Wherever life is exposed to a merciless, shadowless glare, it must have a way of not only sheltering and screening, but also of strengthening, its mysterious realm. One may call this training, sport, or gymnastics performed by the faculty of imaginative experience—it does not matter what it is called; here something has been lost and must be made good; here there is a danger to be averted. This means that we must activate those energies in man which have been passed on from generation to generation and which even to-day are still unexhausted.

## Nine Parallel Chapters

### VII

The teacher who evaluates children's drawings from the point of view of the pleasure they give him will always run the risk of seeing certain phases of development negatively, and not only because they are aesthetically less attractive than the others. One of the most common mistakes is that the teacher, worried lest the child is going wrong, interferes with the child's building up of a schematic view of its own. 'One must take a risk with boys,' (*Knaben müssen gewagt werden*), Herbart says, meaning that one must let children run head-



The Journey to America. Age 7

long into their natural crises. When the child realizes that it has got into a blind alley, it usually finds its own way of getting out again; if not, one can always find a suitable way of helping it. If the adult sets a goal for the child, he will almost always disturb its develop-

## *Nine Parallel Chapters*

ment. But if he discovers from observation what the child's individual law of development is—and it is easier for him to do this than it is for the child, since he knows about children's development in general—then he will be able to help.

Progress into a new phase of development sometimes looks, at first, like a regression on the old level. I know of a case where the teacher reproved a child for the 'scruffy' way it suddenly began to draw trees. Up to this time it had been drawing them in the usual conceptual style, with rhythmically balanced branches and neatly outlined rows of leaves. Now it suddenly began to 'daub, in order', as the teacher suggested, 'to get finished quickly,' and represented the tree's foliage by a chaotic tangle of lines. The reason, as was apparent from the neat, careful way the rest of the picture was drawn, was not a desire to get the picture finished as fast as possible; on the contrary, the boy had all at once realized that the trees he had been doing hitherto did not produce the phenomenon 'tree', made up of a whirl of branches and leaves, the interplay of light and shade. He was now trying—clumsily enough—to reproduce what he saw by an analogous tangle. From the ornamental point of view he had made the transition from the criss-cross and series orders to that of strewing, that is, to the category of painting. Thus what was technical regression was intellectual progress. It is possible for a child at such points of transition to lose all pleasure in drawing or painting because it lacks the technical capacity it needs to realize its new vision. This cessation on one side can very well lead to a beginning on another plane; the child may then turn to things it feels a match for. If only for this reason we must reject the suggestion that children's painting should be supervised by artists instead of by educationists. Only those who have a general view of the child's whole development can rightly judge the significance of such seemingly negative phenomena and therefore will not try to counteract them by main force. Even the most beautiful painting done by children is only the residue of a development towards a higher stage.

## *Nine Parallel Chapters*

Even to-day little is known of the significance of the rotatory sense of space, although the phenomenon is observed often enough. The anthropologists have provided evidence that mankind's epoch-making inventions, such as the wheel, the potter's wheel, and the loom, always seem to be anticipated, as it were experimentally, in ornament, before the practical invention is made. Applied to the schematic phase this simply means that by the time it first goes to school the child is inwardly ready for writing; for schematism is in drawing and painting, after all, a kind of pictorial and symbolic writing. A morphological investigation of Chinese writing would probably produce evidence that it is closely related to the early forms of imaginative vision. The primal and basic element of the well-known Yang-Yin symbol is the rotatory sense of space. One very positive aspect of schematism, as it manifests itself in individual forms and in construction, is that it makes narrative possible. Now the child receives what one might call literary stimuli, from the subject it has chosen or has been set. If the child is to cope with a theme, neither form nor colour must any longer be a problem in relation to the desired effects. If the theme appeals to the child and its imagination is stimulated, the conventional forms easily take on life; if the task is a boring one, they remain mere tokens or movable scenery. Whereas in its early years, the child finds what is close at hand and everyday new and interesting enough to stimulate it into creativity, now it is the special and out-of-the-ordinary that stimulate—the zoo, the circus, the fairy tale, Heaven and Hell.

What used to be called 'childish mistakes', e.g. the so-called X-ray picture in which one sees, say, the limbs through the dress, or the mixed profile, i.e. one with two eyes, so that there is at once a side-view and a front-view, are characteristics of schematism that are brought about not by the child's 'notions' but by its mixed sense of space, which in this phase is made up of motor, haptic, and optical elements. What is also very characteristic is the tendency, when drawing figures in profile—whereby the right-handed tend to

## *Nine Parallel Chapters*

make the figure face left, the left-handed the other way—to make the body triangular, as though it were a dress. Here the one-handedness that, as we say, divides the box diagonally into triangles manifests itself as the beginning of movement in the plane.

### VIII

The small child's 'daubing' is usually regarded as corresponding to scribbling. In reality these two activities are diametrically opposed to each other. They are like two tunnels being driven through a mountain from opposite sides, which are intended eventually to meet and join up. In scribbling the child is struggling out of the closed realm of its inner world to the light; in colour it encounters this light in mysteriously alluring form as something luminous that it perceives first of all on things, but later, when it makes acquaintance with liquid paint, as a magical substance. Colour on things and colour in itself (paint) are obviously two very different experiences, and they also have different effects. Colour on things is associated with visible, tangible and audible objects of various shapes and seems to be adapted and subordinated to these shapes. 'Then the wolf got a quite yellow voice,' a child said. Colour in itself is like a goblin; it is a Something that spreads out and changes everything that comes into contact with it into itself, so assimilating it. At first the child cannot fit such an experience into its scheme of things; the phenomenon is both attractive and repellent. In the early stages the coloured pencil and the crayon correspond to colour on things, for here colour is subordinate to graphic form, to line. Water-colour on the other hand provides a stimulus that the child cannot yet cope with mentally. Adults do not think of this possibility when they give a child a paint-box containing too many colours. Red, yellow, blue and green—that is all the child can manage at first. It chooses its favourite colour and colours itself and

## *Nine Parallel Chapters*

the paper with it—painting begins with having red, yellow, or blue hands. In this way the magic of colour is experienced most intensely; yet mothers are generally inclined to nip such experiences in the bud.

In its fifth, and quite often only its sixth, year the child becomes capable of standing up to colour and fitting it into its formal scheme. Now it is able to produce form by means of colour, without a preliminary drawing; and this signifies a heightened capacity to animate forms. Here the colour has the symbolic value corresponding to the symbolic form. The precondition is that the graphic development should not have been too early drowned in water-colour. Otherwise the child loses its chance of holding a conversation with the slowly developing forms and letting itself be guided and 'stimulated' by them. At certain stages of development colour should be provided only with the greatest caution, especially when the child is evolving forms. Before this process is concluded paint can only disturb the child. This applies above all to the period when the child first goes to school. Only when the formal development seems in danger of petrifying can paint be of help, loosening it up and carrying it on by means of intense colour-experiences. At the right moment paints are medicine; at the wrong moment they are almost a poison.

Paints are for the child often a means of working off psychic experiences and conflicts. For instance, I know the case of a boy whose pleasure in painting was destroyed by sharp criticism from a teacher who lacked understanding. The boy thenceforth became thoroughly 'difficult', since he had lost the possibility of getting over his troubles by means of creative activity.

## IX

For schools the answer to the question 'Is the drawing-lesson work or play?' is of decisive importance. Where the first school



## *Nine Parallel Chapters*

years are concerned the answer is not hard to find. Drawing and painting are a pleasure to the child, recreation after the discipline of lessons proper. The crisis that can be observed after the twelfth year, or sometimes even earlier, in which the child begins to lose confidence in its own idiom, finally turning towards an apparent grown-upness within the framework of the conventions of reality, a state of having 'grown out of' childish things, sets the school a new problem. The conventions are important, for they are the basis of a practical coming to terms with life and finding one's bearings in the world; the child instinctively knows this and moves in that direction. The school must be helpful to the child in this and now set the child, which has up to now been playing, to work. Instead of simply liberating in the child abilities that the adult no longer possesses, the teacher can now really be a teacher and give instruction, right down to the rules of perspective. If we will abandon the delusion that there is such a thing as direct training towards art, we can take this step with a clear conscience. If not, it is the teacher and not the child who is the victim of the adolescent crisis. It all depends on the teacher's quality whether the rhythm of the child's development is vigorous—as, for instance, in the case of the two boys mentioned in the first chapter—or blurred, vague, and undecided. For only if the inner dialectic of puberty can work itself out to the full is there a chance for the adolescent to find the way to art later on, as a way of returning to himself. The barrier that Nature has set between the born artist and the normal child in the form of the puberty crisis must not be torn down. Turning into an artist is something that should be made difficult rather than encouraged.

Hence schools should distinguish between two quite different kinds of drawing and painting activities among the children: in the first years there should be free and unhampered activity, which should not be marked and criticized, since it is part of a natural development, and later there should be a realistic form of drawing and painting approximating to the technical drawing. In this second

## *Nine Parallel Chapters*

phase progress in work, progress in the child's grasp of visible reality, is a real educational aim, for now it is no longer Nature that is decisive, but hard work and skill. Therefore marks and criticism are here suitable. It goes without saying that in practice development is never so plainly and clearly defined; it tends to come about by transitional stages. Every child goes through its own individual development, and no generalizations can be made about it. Nevertheless, the larger framework, the anthropological framework, within which each individual development takes place, is valid for all children.

On the basis of statistical investigations, some educationists have worked out a 'time-table' of children's development, intended to establish a norm. Richard Kienzle, for instance, gives the following scheme:

1 year: more or less random lines, imitative.

From 1 year 2 months: swinging scribbles with right and left hand.

From 1 year 6 months: circular scribbles.

From 1 year 8 months: strewn scribbles.

From 1 year 9 months: isolated scribbles (zigzags, spirals, etc.).

From 2 years: orderly distribution on the paper.

From 2 years 10 months: interpreted scribbles (Mummy; bow-wow, scribble-patch).

2-3 years: 'sign' phase (schematic).

From 2 years 7 months: cephalopods.

From 2 years 7 months to 3 years: scenes.

From 3 years 5 months to 4 years: drawing of 'letters'.

From 3 years 5 months to 5 years: ornamental additions, differentiation (heads, borders, hair, teeth, etc.).

From 4 years 8 months: houses.

From 4 years 9 months: objects (table, chair, train, motor-car).

In the sixth year first touch of realism. Urge towards synthesis

## *Nine Parallel Chapters*

and composition, more guiding concepts. So-called 'childish mistakes' (mixed profile, X-ray picture, turning over, lack of orientation, mirror-writing), alphabetic writing, ornamental scribbles, plants (tree, flower), landscape, (sun, sky), animals.

In seventh year differentiation tending towards orientation (spatial arrangement, representation of space), proportions, movement, colour; further: automatisms, solidification into schematism, petrification into 'cliché'.

Such a list must of course be treated with caution, since it is not based on an undisturbed development of the child. In children who are allowed to draw with both hands objectivity is somewhat retarded, but then appears in forms that are much more vigorous and original.

The work referred to is only one of a long series of studies of children's development in drawing, almost all of which suffer from the defect that they do not sufficiently exclude the adult as a disturbing factor. In addition, the disturbing factor 'art' interferes with the adult's own objectivity in considering these phenomena; the adult is much more under the influence of tradition or the movement to which he adheres than he consciously realizes. This lack of objective standards has led to a number of schisms and discrepancies in the teaching of drawing, both in theory and in practice, so that in this field to-day we find almost as many different sects as there are in the realm of art itself. The battle rages scarcely less loudly here than there, and often uses slogans borrowed from the quarrels that go on between movements in modern art. But the worst of it is that the battle is fought at the children's expense; it is they who suffer.

The reconciliation of all these various endeavours that is necessary in the interests of the children can only be brought about by a neutral authority that is not involved in the quarrel. In this book an attempt has been made to show that anthropology and psychology constitute such an authority, one whose judgment should command hearing and respect from all sides, and the claims of aesthetic

## *Nine Parallel Chapters*

theorists and artists have been rejected as decisively as those of all who are one-sided or bound by tradition. One-sidedness and declaration for one particular line in taste are fructifying in the development of art, but damaging in education, for they sin against the primal universality of the child.

Looking at the present-day situation in post-war Germany, for instance, one notes a considerable number of endeavours to reform the teaching of drawing in elementary schools, above all in Munich; these endeavours are being made by individuals and have the virtues and the defects of all such one-man endeavours. The advantage lies in the vitality and freshness with which these men, most of them artists, are working out their methods, which, in combination with their own stimulating personality, succeed in getting amazing results from the children. The disadvantage lies less in the fact that these subjective methods cannot be successfully applied by others than in the fact that thus the children's painting and drawing may easily develop in a particular way that is not in accordance with their development in general.

Nevertheless, at the various international exhibitions of children's paintings it has been evident that German children are often not allowed to paint and draw with the joyful abandon that is customary in, for instance, England and the U.S.A. One has felt more of the teacher's watchful gaze than of the child's radiant eye. The German children were evidently expected to be neat and tidy and hard-working, and had indeed become all that was expected of them. There was a suggestion, too, of folk-art or of the 'arts and crafts' outlook. What is the reason for this peculiarity? Is it the German character, with its ingrained taste for discipline, for the workman-like and conscientious, that forces these children to see more as draughtsmen than as painters and to dislike bold colours? Well, one only needs to look at the paintings done by the same German children under the guidance of 'outsiders' to reject that explanation. Children constitute a natural International, and the German

### *Nine Parallel Chapters*

child takes us into the same magical realm as does the French, English, or American child, as soon as we find the right approach.

We see, then, that quite apart from the material difficulties experienced by German schools and teachers in recent years, which put us at a disadvantage in comparison with other countries, it is the method that is to blame. In most German schools the teaching is still done according to the theory of Gustav Britsch, a theory that was extraordinarily useful in its day but now, as indeed most of its adherents admit, needs to be brought up to date and expanded. Britsch saw the child's pictorial achievement in 'direct mental assimilation of visual-perceptual experiences'; we cannot but feel that this is too narrow a basis, once we have discovered the importance of the motor and haptic side of experience. Nor can we any longer accept the parallel between children's drawing and folk-art (Britsch's theory was based on the ideal, shared by the whole Art-Nouveau generation, of a revival of craftsmanship arising out of a return to origins); first of all, such a parallel applies only to certain phases in the child's development, and secondly folk-art, being an adult skill and an adult tradition, becomes a disturbance to the child if it is set up as a model to it.

If we consider the 'outsiders' criticism of official methods, we see that their attack is directed against the weak points in the system, the failure to develop the motor and sensory faculties. The painter Christof Drexel elaborated a method of 'choric drawing', which he at first used therapeutically in cases of brain-injuries, and then later tried to apply in education. The method consists of getting adults or children all to join together in drawing with chalk on large sheets of black paper or on blackboards. The stimulus to the motor imagination is similar to that set up in two-hand drawing. Whereas Drexel disregarded colour, Richard Ott sees it as liberating the child from the graphic and handicraft constriction of orthodox methods. The great and undeniable success of the 'School of Art' that Richard Ott founded in the America House in Munich should set educationists

### *Nine Parallel Chapters*

on the alert. Here abilities and wishes that could not find expression at school found an outlet. The 'School of Art' has clearly revealed the defects of 'school art'. It is now up to educationists to draw the conclusions. This achievement of Richard Ott's is one that must receive due honour, even if one does not agree with his aesthetic theory about 'children's art'. The educationists' opposition, to some extent lacking in objectivity as it is, on the one hand, and raptures and obsessive enthusiasm for art, on the other hand, have combined to accentuate differences to an extent that every impartial observer must deplore.

This may perhaps give some indication of the crisis that the teaching of art is now undergoing—and not only in Germany. Fruitful development is possible only if the various movements will, for the child's sake, abandon their stubborn attitudes, and adopt that spirit of universalism which inspired the great educationists of the past. Everything at its time and in its place—let no one believe that the child belongs entirely to him and his own view. The child's proper guide is he who will lead it along the way to itself and so to the world.